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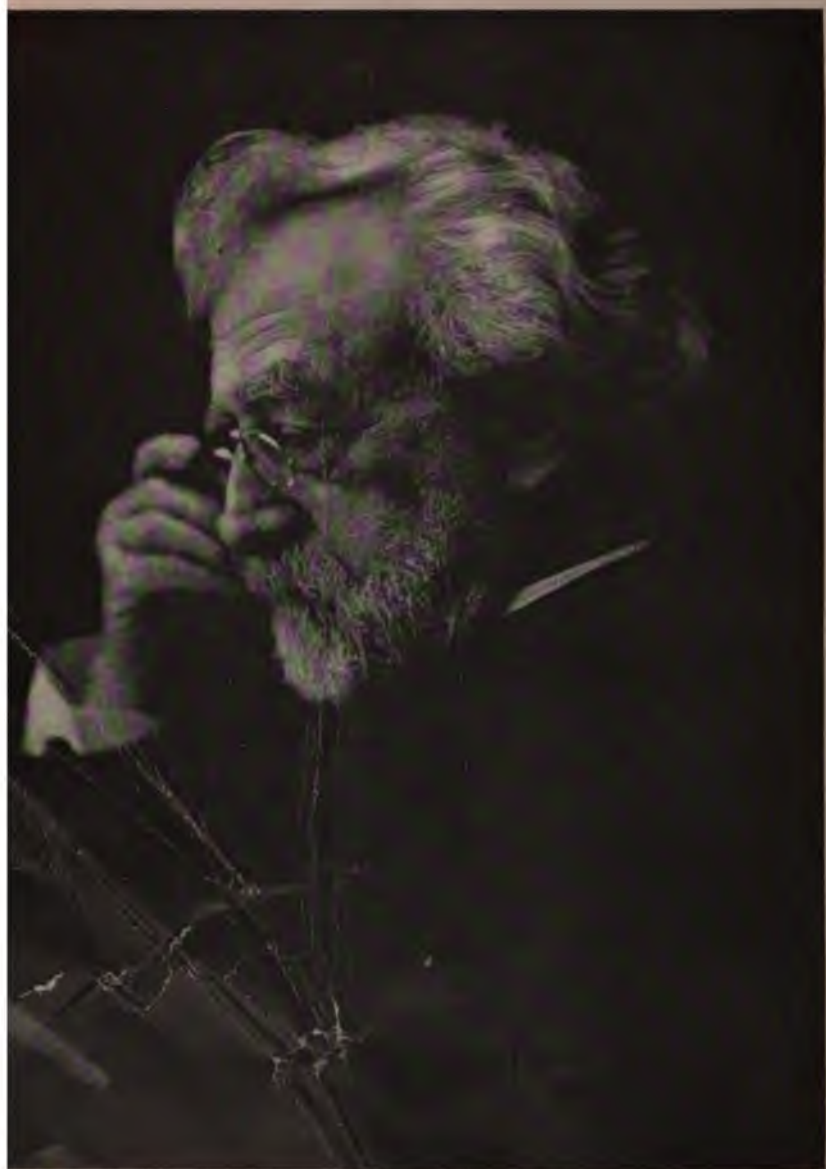
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**HISTORY OF MEDICINE
AND NATURAL SCIENCES**

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A. Javbi

HISTORY OF MEDICINE IN NEW YORK

Three Centuries of Medical Progress

BY

JAMES J. WALSH, M.D., PH.D., Sc.D.

**Member of the French, German and Italian Societies for the History of
Medicine; author of History of Medical Society of the State
of New York; Makers of Modern Medicine; Old-Time
Makers of Medicine; Medieval Medicine; Psycho-
therapy; The Popes and Science; The Cen-
tury of Columbus; The Thirteenth
Greatest of Centuries, etc.**

Volume I

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TO
DR. ABRAHAM JACOBI

TO YOU I OWE THE INCENTIVE TO MY FIRST
ESSAY IN HISTORICAL MEDICINE, THE HISTORY OF
THE MEDICAL SOCIETY OF THE STATE OF NEW
YORK; NOW THAT THIS LARGER WORK HAS COME,
IT SEEMS BUT PROPER THAT IT SHOULD APPEAR
UNDER YOUR PATRONAGE AND CHRONICLE PRE-
CIOUS YEARS OF FRIENDSHIP THAT HAVE MEANT
SO MUCH FOR ME.

JAMES J. WALSH

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PREFACE

The Empire State has been one of the principal factors in medicine in this country. It has had more than its proportionate share of the physicians and surgeons whose names will be ever remembered at least in American medicine, and it has had a noble galaxy of men whose work as pioneers above all in the medical and surgical specialties have made them leaders and teachers of the medical profession throughout the world. That this is no idle boast nor bit of sentimental exaggeration, the following pages show very clearly and abundantly.

It was only fitting, then, that the history of medicine in New York and of her institutions both for medical education and for the care of the afflicted, should receive such treatment in detail as they deserved. It was eminently appropriate that the biographical details of the lives of the men who are now making medicine and surgery, many of them along original lines that are worthy of their great colleagues of the older time, should be associated with this history of New York medicine and New York's institutions.

This history of medicine in New York State will be a monument to what New Yorkers have done and are doing.

THE AUTHOR.

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CHAPTER I

INTRODUCTION—THE EUROPEAN BACKGROUND OF COLONIAL NEW YORK MEDICINE

IT would be easy to think that the early history of medicine in the Dutch colonial days, when New York was New Amsterdam, for a half a century or so after the first settlers came at the beginning of the second quarter of the seventeenth century, could not have much significance, because, after all, medicine itself in the seventeenth century is usually presumed to possess very little enduring historical interest. The transfer of the colony to the English authorities would not seem to promise anything better in this matter, and whatever of scientific medicine there was at this time is commonly thought to have no special appeal to any except perhaps those occupied with the dry-as-dust details of medical antiquarianism, rather than the actual history of the progress of medicine. Some of the writers on the early history of New York have been rather inclined to suggest this utter backwardness of European medicine during the time when New York was a colony, as a reason for slurring over medical historical details. Miss Colton, for instance, in her "*Annals of Old Manhattan*" (Brentano, New York, 1901) writes as a reflection on the arrival of Dr. Johannes La Montagne, one of our earliest physicians on Manhattan Island in 1637, that "in days when a remedy recommended by the most famous physician in London was a balsam of bats, and the chief ingredient in a popular decoction was raspings from a human skull unburied, we may question the advantage accruing to the residents of New Amsterdam by the arrival of the learned M.D."¹

¹ Miss Colton's remark is after all only typical of a good many rather ridiculous reflections on the part of historians generally as to the status of medicine at any particular time, due to the fact that popular medical superstitions, or some fad of medical practice, is taken to represent the scientific medicine of the time. Almost needless to say, any time in the history of medicine will be sadly misunderstood if such reflections are considered

Probably nothing shows the utter absurdity of such comments on the status of medicine in Europe at this time as the fact that the seventeenth century has a whole series of very great names in its medical annals which will always be in honor among their medical colleagues, at least, because of their permanently valuable contributions to medicine and surgery. London was the home of a number of them, and the single fact that Harvey was alive and was doing his great work in practical as well as scientific medicine just at the date mentioned, is perhaps the best reflection on the slur on the medical work of that time when Miss Colton would suggest that the status of medicine can be judged from the London physician with his balsam of bats and skull moss.

For any proper understanding of the first century of the history of medicine in New York, it is important to recall the names of the men who were at work during this century with some details of what they accomplished. New York was intimately connected with both Holland and England during this century, and these countries contained at this time Sylvius (1614-72) after whom the fissure of Sylvius in the brain was named; Graaf (1641-73) after whom the Graafian follicles in the ovary are called; Willis (1621-75) to whom we owe the description of that important portion of the intracranial circulation which has since borne the name of the circle of Willis, as well as Cowper of the glands (1667-1709); Highmore of the antrum (1651) and Wharton (1656) of the duct; Tyson, the comparative anatomist (1650-1708); Ruysch (1638-1731) of the famous Anatomic Museum; Steno or Stensen (1638-1686) whose name is immortalized in the duct he discovered, but whose work done mainly in the Netherlands, though he himself was a Dane, went far beyond this; and, finally, those giants of the history of medicine in England—Harvey (1578-1657) and Sydenham (1624-1689)—to whom we probably owe more than any other two in the history of medicine in the past three hundred years.

In the neighboring Teutonic countries there were Peyer (1653-1712) of the well known Peyer's patches in the intestines, and

historical in any true sense. If our own time should come to be judged three centuries from now by our patent medicine advertisements, Dowieism and Eddyism, and perhaps even by such curious interests of the medical profession itself as the Browne-Sequard Elixir, to say nothing of some of the absurdities of organic therapeutics and turtle serum and the like, it will be quite possible for the historian of the future to make as much fun of our medicine as can be made of that of the first half of the seventeenth century.

Brunner (1653-1727) after whom the intestinal glands are named; Scultetus (1595-1645) of the bandage and of surgical fame, whose illustrated volume of surgical instruments and the surgeon's armamentarium generally was to be issued in so many editions; Meibomius (1666) of the conjunctival glands; Minderer (1620) after whom the spiritus Mindereri is named; Glauber (1604-1688) of the salts, as well as the German surgeons to whom we owe descriptions of operations often thought to be modern. There was Florian Matthi (1602) who did gastrotomies (the early name for laparotomies); Acoluthus, of Breslau (1693) who did the partial resection of the jaw; Schonkoff, who describes an ovariectomy in 1685, as well as Purmann (1649-1711) the well known Brandenburg army surgeon who regarded anatomy as the true basis of the surgeon's knowledge, and who performed such surprising operations at this time as trephining, suturing wounds of the intestines, the removal of foreign bodies from the bronchi, various procedures on aneurisms, as well as transfusion of blood. Even Fabry of Hilden (1560-1624) usually called by the Latin form of his name, Fabricius Hildanus, "the father of German surgery" as he is called, of whom a statue was unveiled in Düsseldorf shortly before the war, lived over into New York's first century of medicine.

Down in Italy there was if possible a still greater group of men, to whom medicine owes very much, at work at this time. Among them were Aselli (1581-1626) the discoverer of the lacteal vessels; Bellini (1662) after whom the tubules in the kidney are named; Pacchioni (1697) who first described the Pacchionian bodies; Father Kircher (1602-1680) the Jesuit, who gave the first definite hints of the existence of microbes and the spread of disease by carriers; Malpighi (1628-1694) after whom more structures in the human body are named than any other; Redi (1626-1694) who demonstrated that maggots did not develop spontaneously in decaying matter; Borelli (1608-1679) who introduced mechanics into medicine; Sanctorius (1561-1636) the celebrated Paduan professor, the first to describe the clinical thermometer and the pulsilogium, or pulse clock, as well as the first to study the physiology of metabolism; Santorini, of the cartilages; Magati (1579-1647) and Marchetti (1589-1673) surgeons who brushed aside older surgical superstitions and did much to advance surgery, and many others.

Indeed, no country in Europe was without its distinguished men, for France had Vieussens (1641-1716) to whom we owe the begin-

nings of scientific knowledge on the heart and important foundations on the anatomy of the nervous system; Duverney (1648-1730) who investigated the inner ear and wrote the first treatise on otology; Pecquet (1622-1674) who discovered the thoracic duct and the *receptaculum chyli*, as well as Descartes (whose volume "De Homine" corresponds, as Sir Michael Foster suggests, to Herbert Spencer's "Principles of Biology") in that time, and was the first popular text book of physiology. In France particularly, obstetrics was laid on a firm foundation, and Mauriceau (1637-1709) was teaching in Paris, writing his well known work on the subject, while Paul Portal (died 1703) was teaching at Montpellier, describing podalic version and the management of face presentations.

The two countries in Europe that were the source particularly of enduring contributions to medical science and practice during the seventeenth century were Holland and England. New York, originally New Amsterdam, found itself in the rather fortunate position of being deeply influenced by both of these countries in succession, passing from the influence of one to the other, just as the great scientific era of the one had culminated and that of the other was given a new impetus by the foundation of the Royal Society. The great centers of medical education in the seventeenth century were Leyden, Padua, and Paris. Paris and Padua were old, having had an almost uninterrupted primacy in medical teaching, as well as rivalry, since the early fourteenth century. Leyden was, however, comparatively new, and therefore attracted even more attention in the educational world than its rivals.

As a matter of fact, both Holland and England were in the seventeenth century in that very favorable position of national efflorescence, the spirit of which is so likely to flow over into the intellectual life of a people. Both of them were enterprising in their development of colonies across the seas, and the mother country was deriving benefit from these, and at the same time furnishing an outlet for youthful enthusiasm in the opportunities afforded to ambition and enterprise to lift itself out of the parent nest and find occupation for unused energy. The restless spirits that might have disturbed life at home found an inviting field in the colonies, and the popular mind was aroused to its highest point of accomplishment.

At the end of the sixteenth, and during the first half of the seventeenth century, the best tribute to the excellent work of the Netherlands schools of medicine is to be found in the fact that a

number of Englishmen made their way to the Netherlands to share the opportunities there. In 1578, when all the medical teaching at Leyden was in the hands of a single professor, Geraert de Bont (Bontius), probably the father of Jacobus Bontius, many English medical students came to study medicine there. Jacobus Jaimes (James?) entered in 1578. At the end of the century there were half a dozen English medical students there, and of the 137 students who graduated at Leyden in the first fifty years of its existence no fewer than twenty-one were Englishmen, according to Van Leersum.² It is noted also that there were English medical students in attendance at the other universities of the Netherlands. Above all, Leyden came to be a very center of medical educational interest when Sylvius (1614-1672) was teaching there, and students gathered from all over Western Europe at least to take advantage of the opportunities afforded. The tradition of Leyden's European prominence in teaching which opened with Sylvius, continued under Ruysch (1638-1731) and Nuck of the glands and ducts, and above all when Boerhaave (1668-1738) came to make it the medical teaching capital of Europe for the time.

Some of the group of young enthusiastic students who gathered round the man we know, according to the fashion of the time, by his Latinized name of Sylvius, or, as his students knew him, Professor Franciscus de le Boë, at Leyden, in the early part of the seventeenth century, just as New York was beginning her colonial existence, were destined to leave their names deeply impressed on the history of medicine. They included Willis from England, Stensen from Copenhagen, as well as de Graaf and Swammerdam (1637-1680) from Holland itself. Sylvius' own original work in anatomy was not of great importance, and his relations even to the Sylvian fissure named after him are obscure, but there is no doubt that he was a great teacher. Besides, he was a founder in physiological chemistry. He had even at that early date some theories that are not fantastic about the function of the ductless glands, and he had much to do with the making of chemistry a background of physiological thinking. Garrison, in his "History of Medicine," says that we owe a still more important service to Sylvius in the teaching of medicine, for though he had only a little infirmary of twelve beds at Leyden, he introduced ward instruction into medical education. He was preceded in this by the Italians, but to him

² E. C. Van Leersum, "Medical Science in the Netherlands," N. Y., 1915.

belongs the merit of emphasizing this feature of medical instruction for the West of Europe.

In his "Medical Science in the Netherlands," E. C. Van Leersum dwells with pardonable pride on what the medical schools of the Universities in the Netherlands did for clinical teaching. He says:

The name of Sylvius puts us in mind of another institution which contributed in a high degree to the reputation of Netherlands' medical men. We mean the custom of teaching at the bedside. It was for a long time held that in the Netherlands this kind of instruction was first of all given at Utrecht University. The fact is that on March 17th, 1636, the Utrecht professor, Willem Van Der Straten, intimated in an oration that he intended to give students an opportunity of examining patients and of learning how to make a diagnosis, but whether he carried out his intention is nowhere stated. On the other hand, it appears from an authentic document discovered a few years ago, namely a resolution of the Leyden governors of December 4th, 1591, that even at that time, as much as forty years earlier than at Utrecht, some people's minds were occupied with the same problem; and, indeed, taking into consideration the well-known diligence of the Leyden governors of that time, it is not impossible but even very probable that a beginning was made with the plan the faculty had proposed to the board. However this may be, clinical teaching soon became a general practice in the Netherlands, which contributed not a little to the respect for education in this country.

Van Leersum dwells on the exceptional character of the opportunities thus provided in the Netherlands for the practical training of medical students in the knowledge of disease and its treatment. The arrangement for this purpose in Holland represented the first clinical facilities provided for students in Northern or Western Europe. Before this, early in the Renaissance, Italy had revived clinical teaching, and Padua and Bologna, as well as Pisa, Ferrara and Rome, became as a consequence the Meccas of medical students from all over the world, anxious for clinical instruction. Unfortunately the religious disturbances in the Teutonic and English countries in connection with the reform movement at the beginning of the sixteenth century cut off to a great extent the attendance of medical students from these countries at the Italian universities. Holland was the first to wake up to the necessity of filling the *lacunae* in medical education thus created, and deserves great credit. Van Leersum has with more or less pardonable national feeling emphasized this for us:

For with the exception of a few universities in the North of Italy where a patient was sometimes shown to the audience, there was nowhere



Oldest Medical Prescription Known
on Stone from Egypt
(Metropolitan Museum)

in Europe an opportunity for qualifying oneself in the examination of patients, unless one became the private pupil of some physician and visited patients in their homes with him. This, however, was an unsatisfactory proceeding, as there could be no question of regular observation of the progress of a disease or checking the diagnosis after death. The advantage of practical teaching as conducted in Holland, lay in the fact that students were given the opportunity of seeing patients regularly and noticing the effect of the treatment with their own eyes, whilst dissection after death enabled them to judge of the changes brought about in the organism by diseases. Boerhaave's most celebrated pupil, Gerard van Swieten, who was appointed physician to the Empress Maria Theresa of Austria, and charged with the reform of medical education in Vienna, was familiar with a system of shorthand, and so able to take down literally the lessons of his great master. These valuable notes are kept in the Imperial Library at Vienna, and have partly been deciphered.³

Sylvius' pupil, de Graaf, was not only an anatomist to whom we owe a classical account of the testicle as well as the best descrip-

³It might be thought that the practice of medicine would be a very different thing three hundred years ago from what it is now, but the more one knows about the older conditions, the less one permits himself to think so. I called attention not long since in an article on "The Fee Book of an Irish Physician of the Seventeenth Century" (*New York Med. Jour.*, Aug. 24, 1912) to the fact that it is really surprising how closely the practice of even three centuries ago resembles that of our own, and how much the onomatology of disease and various modes of expression with regard to clinical diagnosis are like those that are employed at the present time. While then we might feel sure that medical practice must have been very different before Harvey's discovery came to revolutionize physiology and accurate pathology, the assumption proves to be rather unjustified when we take up the fee book of Dr. Thomas Arthur Fitz William, who began his practice within a decade before the publication of Harvey's discovery.

This happens also to be within five years of the foundation of the colony of New Amsterdam, and as Dr. Fitz William continued to practice and make entries in his fee book for about a quarter of a century at this time while he was practicing in Limerick and Dublin, we are able to secure a rather good idea of the general practice of the time. Dr. Fitz William's first entry curiously enough is with regard to the treatment of a simple gonorrhea begun on the 20th of May, 1619, for which his patient paid a fee in advance of two pounds. This was followed by such entries as "freed a woman from Orthopnea"; treated, to quote his own terms, "putrid sore throat," "febrile disturbance of the liver, with obstructions," and then such affections as pleurisy, bradypepsia, febrile sore throat, stomachic cardialgia, sluggish digestion, palpitation of the heart, hysterical hydrops, hypochondriacal melancholy, phrenitis (evidently as he uses it a term for meningitis), round worms, tape worm, hientery, nephritis, peripneumonia, ophthalmia, scotoma, elephantiasis, and disease of the bones of the back (probably Potts' disease) as well as injuries, abscesses, and boils, quite as a general practitioner of the present day would find them occurring in his case book.

tion of the ovary up to that time, but he was also a physiologist of original distinction who made special study of the pancreas, using animals for experimental demonstrations, creating in them parotid and pancreatic fistulæ for the purposes of comparative study. His fellow student Stensen discovered the duct of the parotid while making experiments on the sheep, and then afterwards demonstrated it on the cadaver. In the early part of the seventeenth century, however, the Low Countries had not as yet developed that liberal spirit with regard to the practice of dissection which was to come in the next generation. There was a great improvement over the preceding century in this regard when Vesalius could only obtain material out of which to construct a skeleton for the purposes of study, by taking down the bleached bones of a malefactor hanging in chains outside the city walls and smuggling them into the city. Vesalius (1514-1564) went down into Italy in order to secure anatomical material more freely, but so did Steno in the early seventeenth century, though in the meantime a much greater spirit of liberality in this matter had developed in Holland.

The number of pictures of dissections ("anatomies," as they were called) that have come down to us from the painters of Holland during the seventeenth century, show us how common was the practice, and at the same time how much it must have been taken as a matter of course. It is easy to understand that popular prejudices in the matter of anatomical work on the human cadaver would soon disappear when so many of these pictures were on public exhibition. Rembrandt's famous "Anatomy" of Dr. Tulp or Tulpus (1652) is the best known of these dissection pictures, but scarcely an important Holland gallery is without some of these anatomies. If we recall that over a century later, owing to the narrower English influence dominant in the population, all dissections in New York City had to be done practically in secret and not without some danger from popular disaffection with regard to it (see the account of "The Doctors' Riot" in the chapter on "The Quest of Anatomical Material") it will be easy to understand how much more of liberality for the development of anatomical science would have existed in New York had the government remained in the hands of the Dutch.

The place of the Netherlands in biological science about this time can be very well appreciated from the number of names of the men that are still famous, and whose works and inventions are

recognized as ground breaking in importance. The question as to the credit of priority for the invention of the microscope as between Galileo, the Italian, and Jansen, of Middleburg, Holland, has never been absolutely settled. There is no doubt at all of Jansen's scientific merits in the matter, however, nor of his originality, and it would seem that in 1590 he first succeeded in placing two lenses together in such a way as to create the simple original model at least of the compound microscope.

A generation after this, Jan Swammerdam (1637-80) as New Amsterdam was developing, though he was a physician, devoted himself to biological research instead of medical practice, and he investigated the minute anatomy of a great many smaller creatures, the bees, mayflies, snails, and others. His reputation spread throughout Europe, and he was invited by Cosmo de Medici to take a chair in the biological sciences at the University of Pisa but refused, preferring to continue his biological studies quietly at home, where his connections with Dutch navigators from all over the world brought him many exotic specimens. The book by which he is best known, the "*Bybel der Natuur*," was not published until more than half a century after his death, by Boerhaave, but it amply justified the opinion which his contemporaries had of him as an original, exact, intensely observant student of anatomical structures. Some of the drawings in the book "surpass all other contemporary work in exquisite delicacy and accuracy of detail" (Garrison). Swammerdam was only twenty-one when he described the red blood corpuscles, and only twenty-seven when he discovered the valves of the lymphatics. He was not only a minute anatomist, however, but an experimental physiologist, demonstrating that the foetal lungs will float after respiration has taken place, and studying the movements of the heart, the lungs and the muscles, by plethymographic methods which are almost modern.

About this same time Leeuwenhoek (1632-1723), who was just an alderman of the little town of Delft, devoted himself for a much longer life than that of Swammerdam, who lived to be only forty-three, while Leeuwenhoek was ninety-one at his death, to microscopic work of many kinds. With Dutch patience and thoroughness he ground a number of lenses, making nearly six hundred microscopes altogether. Specimens were sent him from the East by the Dutch East India Company, and from Russia by Peter the Great. He published some five hundred papers on various subjects con-

nected with the biological sciences. Nearly four hundred of these were sent to the Royal Society of England, and a number more to the French Academy of Science. Leeuwenhoek completed the description of the red blood corpuscles originally made by Swammerdam, described spermatozoa, and discovered the structure of the crystalline lens. He was the first to see protozoa under the microscope, and made accurate pictures of streptococci and staphylococci as well as of individual bacilli and bacteria and of the various comma forms. He completed Malpighi's demonstration of the capillary anastomosis between the arteries and veins, and thus helped to put the finishing touch to Harvey's work on the circulation of the blood.

While doing such good work in the teaching of anatomy and physiology, however, the Dutch were particularly famous during the period while Manhattan was under their rule for their excellent practical work in both medicine and surgery. A fine example of the work that was being done may be found in the life of Hendrik van Deventer (1651-1724), who, after studying at Groningen, practised obstetrics and orthopedics in his native city, the Hague, with a success that meritedly brought him to prominence. Fortunately, he has left in his book, "*Novum Lumen*," a very good idea of his practice in these specialties which shows very clearly how far ahead of his time he was. He deserves the title accorded him, "the father of modern midwifery," for his book with its interesting plates gives the first accurate description of the pelvis and its deformities, and the effect of the latter in complicating labor (Garison). At the same time it is a pioneer work in the delineation of deformities of the spine. His colleague, Hendrik van Roonhuyze (1625?—), wrote a book in Dutch with the title "*Heelkonstige Aankomkingen*," which has been described as the first work on operative gynecology in the modern sense. That this is no overenthusiastic description will be appreciated by the reader, who finds case reports of extra uterine pregnancy and rupture of the uterus, and, as Dr. Howard Kelly points out, a description of a scientific operation for vesico-vaginal fistula, the features of which were exposure of the fistula by a retracting speculum with the patient in the lithotomy position, marginal denudation, exclusion of the bladder wall, and approximation of the denuded edges of the fistula by means of quills fastened by silk thread. Roonhuyze's volume is illustrated with some very interesting copper plates showing his

mode of incision in Cæsarean section. Roonhuyze and Deventer took up the very practical social problem which has always been at the same time a serious medical problem, of improving the status of the midwives in Holland, especially by providing them with the proper amount of education for their profession. Doubtless this movement had its reflex in Manhattan in making the female *zieckentroosters* somewhat more capable for their work of nursing the sick.

By the end of the seventeenth century Holland had laid the foundation for one of the greatest of modern clinicians, Herman Boerhaave (1668-1738), whose influence was to mean so much for eighteenth century medicine through his great pupils, Haller (1708-77); Cullen (1712-90), who carried the ideas to England and Scotland, and, above all, Van Swieten (1700-72) and De Haen (1704-76), the founders of the "Old Vienna School" of medicine. Unfortunately, Boerhaave, though coming after a succession of distinguished practical Dutch physicians, was himself rather given to theorizing, and though his writings gave him a European reputation in his own time and for several generations afterwards, it is rather hard to understand why now, unless we realize that it is the theorist who succeeds with his own time while the observer leaves an imperishable name in the history of medicine. Some of his pupils were to come to New York, and his writings were to influence the prescribing of the eighteenth century among us as it did nearly everywhere else, though as Baas, the well known historian of medicine, says, Boerhaave's maxim, *Simplex sigillum veri*, was never manifested in his treatment, and his prescriptions probably influenced the mind much oftener and a good deal more than they did the body.

When Holland's medical influence was given a setback in New Amsterdam with the cession of the colony to the English, Dutch medical traditions did not cease entirely, and there was still some rather close intercourse with what had been the mother country. English medical traditions gradually came to predominate, but this was not so unfortunate an event for New Amsterdam (now become New York) as it might have seemed, for though Holland was the leader in Western European medicine, England was not far behind, and was in the next few generations gradually to preempt Holland's place in this matter. In England the seventeenth century opened auspiciously for medicine with Harvey's magnificent work in anatomy and physiology which was done in the early

days of New York's history. A number of distinguished men whose names are immortal in medicine followed him. Harvey himself is said to have lost considerable of his consultation practice after his announcement of the discovery of the circulation of the blood, but many of the English physicians of this time whose influence was to be felt in the English colonies across the sea, and whose names we know because of important original discoveries by them in the medical sciences, were noted as surpassing clinical observers. Their practical knowledge of medicine was thoroughly appreciated by their medical contemporaries in the profession who afforded them the opportunity for successful medical consultant work. Among these, particularly, was Thomas Willis (1621-75), of the circle of Willis, already mentioned, who was remarkable for his close careful observation of his patients. It is evident that there was very little that escaped his powers of observation. He was the first to notice the characteristic sweetish taste of diabetic urine. He described *myasthenia gravis* two and a half centuries ago. He wrote a description of and proposed the name for puerperal fever, gave the first detailed account of epidemic typhoid fever as it occurred among the parliamentary troops of Cromwell, and even anticipated Barany (1876—) of our time by his observation of a deaf woman who could hear only when a drum was beating in her vicinity. With the example of such careful observation as this, English physicians were afforded the best possible stimulus for good practical work in medicine.

Among the other distinguished medical scientists in England well known for their successful attention to the practice of medicine, was Dr. Richard Lower (1631-91) in whose treatise on the heart (London, 1669) occurs the description of the tubercle of Lower, called after him. He was the first to perform direct transfusion of blood from one animal to another, and he showed that when dark venous blood was injected into lungs which were afterwards insufflated, it assumed a bright color. He concluded that this was due to the fact that it absorbed some of the air passing through the lungs, and thus added a new observation to physiology. In a subsequent edition of his "*Tractatus de Corde*," Lower, independently of Schneider (1660), though a little later than that German physician, showed that the nasal secretions do not come from the brain nor originate in the pituitary body, though this had been the teaching of Galen, a teaching that had been fol-

owed by Vesalius and all the anatomists and physiologists of the sixteenth and early seventeenth century. Another distinguished English practitioner of this time was John Mayow (1643-79), who located the seat of origin of animal heat in the muscles, and solved many of the problems of the gaseous interchange in respiration, not only as regards ordinary life but also in intrauterine conditions.

Sir John Floyer (1649-1734) was the first to employ the watch in counting the pulse, and has besides written a treatise on asthma containing many modern ideas. John Graunt (1662) wrote the first book on vital statistics, and a number of English physicians of the seventeenth century studied the waters of England and called attention to the diseases which they might be confidently expected to benefit. Glisson (1597-1677), after whom the capsule is named, wrote the classic description of rickets which, and not any special occurrence of the disease among the English, is responsible for the name "the English disease" so common as one designation of rachitis on the Continent. Robert Boyle (1627-1691) and Robert Hooke (1635-1703) though not physicians, did work that gives them a place in the history of medicine with regard to the physiology of respiration and in certain other ways. Robert Boyle suggested that some time or other some one would explain fermentation, and that very probably this would lead to a development of knowledge as regards the infectious diseases. This prophecy was literally fulfilled in the later nineteenth century when Pasteur, having studied the diseases of beer and wine, turned his attention to the diseases of human beings and thus laid the foundation of modern bacteriology.

The greatest of the English physicians, the one whose influence was destined to be felt the most in New York, was, of course, Thomas Sydenham (1624-1689), who revolutionized internal medicine by disregarding practically all his predecessors except Hippocrates. He held a number of theories all of which are now in oblivion or recalled merely to illustrate what foolish notions even a great physician may accept. His fame rests upon his observations. We owe to him a full account of scarlatina as he saw it in London, separating it from measles, and giving it its present name. His description of the chorea which has ever since borne his name is, of course, well known. His studies in hysteria are a classic, though his treatise on gout is his masterpiece. He was an extremely commonsense practitioner of medicine, and his influence was to be felt in the

colonial days in New York. Sydenham believed in fresh air in sick rooms, cool drinks in fevers, especially small pox, which was very common, and introduced the general use of iron in chlorosis, and popularized Peruvian bark for febrile affections generally. His influence was deeply felt wherever the English language was spoken.

The English surgeons of this century did some good work, and Richard Wiseman (1622-1676), the Royalist surgeon, is said by Garrison to have played the same part in the English surgery of his day that Sydenham did in the practice of medicine. It is to him that we owe the description of tuberculosis of the joints as *tumor albus* (white swelling). He has an excellent description also of the "King's Evil," or scrofula. He performed the first external urethrotomy for stricture, which makes him one of the founders of the specialty of genito-urinary diseases.

Between the Dutch and English influences in medicine of a time which was so prolific in work that was to be enduring in its effect, New York colony should not have been seriously lacking in medical attendants quite capable of caring for the ailing. Besides, the colony during the seventeenth century had the advantage of having a rather large proportion of strong healthy select lives, young enterprising men and women who ventured as colonists to take up life in a new country. Medicine in New York was not to be of striking historical significance during this century, but at least the background of its thoroughly progressive European medical connections should be understood in order to appreciate the conditions that developed here.

CHAPTER II

MEDICINE IN NEW YORK COLONY

WHEN Henry Hudson, the English navigator in the service of Holland, entered New York harbor and went up the Hudson in 1609, his voyage was not for purposes of settlement, or even of exploration on this continent, but of prospective discovery in the hope of finding the much sought Northwest passage. The Dutch were intent on finding a more direct way to the East than around the Cape of Good Hope, and when Hudson went up the river which now bears his name he had some hopes that this might lead him out to Asiatic waters. On his return he reported that the country around the mouth of the river, now New York City and its environs, was "as beautiful as any the foot of man had ever trod," and he described the rich products of the land, but even this alluring report failed to make up to the Dutch East India Company for his failure to find a Northwest passage.

The furs, however, which Hudson's expedition brought back, were a much more practical temptation to the company than any description of the country might be. It was not long then before a second vessel sailed for the land of the Manahatas who dwelt in the region explored by Hudson, with the avowed purpose of bringing back some more of these precious furs that commanded so good a price in Europe. A regular fur service came into existence, and in 1611 a third vessel brought back as the guests of the white men on the return voyage to Holland two young chiefs of the Manahatas. A larger expedition was sent the following year (1612), and one of its ships being destroyed by fire at its anchorage, the captain and crew erected four small places of shelter near the southern extremity of the island. This may be considered the first settlement in New York, but was not permanent, though vessels continued to come each year. The only interest of the Dutch in the country was commercial. New Amsterdam was scarcely more than a trading post for a generation, hence it is not surprising that the history of medicine in it is scanty in details, since it lacked a

certain sense of permanency and its inhabitants were mainly the young and strong and vigorous. It might have been different had the English dissenters, who were then at Leyden and who afterwards became the Pilgrims to New England in 1620, come to Manhattan as was at one time proposed. That was fortunate or unfortunate, according to the point of view.

It was not until 1623 that some permanent colonists were landed on Manhattan Island, but these were all men and only eight in number, until the next year (1624) when six families and a number of single men, in all forty-five persons, with household goods, farming implements and 103 head of cattle, were landed. In 1626 came Peter Minuit, who made the famous purchase of Manhattan Island for goods valued at sixty guilders, or about twenty-four dollars. Colonists came now with more confidence, and in 1626 the population of the little settlement rose to about two hundred. It is from this time that dates the first hint of the medical history of New York. Two *zieckentroosters*, or visitors of the sick, Sebastian Jansz Crol and Jan Huyck, who came over from Holland with Minuit, conducted a service every Sunday until the arrival of the first regularly ordained minister, the Rev. Jonas Michaelius. These *zieckentroosters* were educated rather to give spiritual than physical consolation to the sick, but they usually had received some training, or at least certain hints for the care of the ailing and the injured, corresponding somewhat to the classes in "first aid to the injured" conducted in connection with many of the churches of the present time.

Two years later, when the Rev. Jonas Michaelius arrived, he represented a somewhat better provision for the care of the ailing, for ordained ministers at this time usually had some training in simpler medical matters and besides the experience of their ministerial work with the sick, for in those days every sick person was visited by a minister, gave them some valuable practical knowledge.¹ Conditions in the colony were such, however, that neither luxury nor lack of occupation, the two great disturbers of health, were likely to affect folk much. In a letter to a brother Dominie,

¹ This connection between the clergy and the physicians was noted in other of the early colonies as well as New York. Over in New Jersey many of the ministers practised medicine, and some of them had deliberately prepared themselves for what they considered this accessory function of their clerical profession. In Massachusetts the same thing is true, and, indeed, the first American medical publication "The Brief Rule to Guide the Common People

Rev. Jonas, in 1628, complains that there are no servants to be obtained in Manhattan (this seems to have been a chronic condition in New York ever since) and "no refreshment of buttermilk (!) and so forth to be found." To add to the difficulties of the conditions, the letter of Dominie Michaelius alludes to a general conflagration in which the people lost many of their possessions. Fortunately, the colonists were, as a rule, rugged people of the younger adult years, and therefore not likely to suffer injury from privations nor to need much medical care.

The definite need of supplying trained care for the ailing was evidently brought home to the Dutch West India Company about this time, for we find in their charter or set of regulations from the States General of Holland (1629) among the "Freedoms and Exemptions" (Section XXVII) the following provision: "The patroons and colonists shall, in particular, and in the speediest manner, endeavor to find ways and means whereby they may support a minister and a schoolmaster; that thus the service of God and zeal for religion may not grow cool and be neglected among them; and that they do for the first procure a comforter for the sick." During these earlier years some of the ships that entered the harbor of New Amsterdam carried surgeons, and these were appealed to for medical as well as surgical service. The history of surgery in New York, such as it was, begins earlier than medicine, and the story of early surgery is told in a special chapter.

In the spring of 1633, by the good ship *Zoutberg*, three notable persons arrived at Fort Amsterdam. They were Wouter Van Twiller, the new director of the colony; Dominie Bogardus, the second clergyman; Adam Rolantsen, the schoolmaster. This last added another to the medical factors of the colony. As Miss Colton says in her "Annals of Old Manhattan" (p. 58): "Intellectual attributes seem to have been of secondary importance in the required qualifications of a New Amsterdam schoolmaster, but the incumbent of that office was expected to supplement the work of the dominie by acting as a worthy consoler of the sick, by promoting religious worship in the capacities of precentor and church-clerk, and, by

of New England How to Order Themselves and Theirs in the Small-Pocks, or Measels" (Boston, 1677) was written by Dr. Thomas Thatcher, an Englishman who settled in New England in 1635 and in 1669 became pastor of the Old South Church, at the same time practising medicine with success. (Garrison.)

turning the hour-glass, to indicate to the preacher that the time allotted for a sermon had elapsed."

The Dutch at this time, through their East Indian experience, had already garnered a considerable fund of knowledge with regard to practical colonization, and knew better than most of the other peoples how to fit out their colonists. Manhattan settlers never had to face the privations and serious difficulties which the New England settlers had to go through, nor even those which came so near making shipwreck of the Virginia colony. The one serious peril always was the troubles with the Indians, and Dutch relations were more friendly with the Indians in general than those of any other colony except Philadelphia. Especially in the matter of food, the colonists of New Amsterdam had an abundance after the first year or two, and a great variety. They raised wheat and rye, planted orchards; cranberries, raspberries and blackberries grew in profusion, while strawberries were so wildly luxuriant that colonists, according to an old chronicler, "laid down in their midst to enjoy a feast." Practical Dutch housewives were not slow to imitate the palatable Indian dishes of suppaen, succotash, and yockei. Oysters, lobsters, clams, and other shell fish, were abundant, as well as "the luscious food of water terrapin," and wild turkeys weighing from twenty to thirty pounds were frequently shot.

With all this abundance of diet it could not be long before physicians would be needed, and so toward the end of the fourth decade of the sixteenth century they began to arrive. For some time before their coming there was dissatisfaction in Manhattan because they had no regular physicians, and it was evident that the *zieckentroosters* were no longer satisfying the people's needs as in the beginning. In the meantime, besides the clergymen and their assistants and the schoolmasters as recourse in time of sickness, there had come to Manhattan, sent by the West India Company, some midwives and professional nurses or caretakers of the sick, one of whom, Tryntje Jonas, the more famous Annetje (or Anneke) Jans' mother, is named among these. Proper names were not too consistently spelled any more than ordinary words at this time. Some time about 1635 a house was built for her on Parel straat (Pearl street). This house was near the home of Annetje's sister, Marritje, who was the wife of Tymen, the prosperous carpenter. There were several other of these trained nurses sent out, but we do not know

their names. They were usually elderly women, and their training doubtless consisted largely in the fact that they had themselves raised families and, therefore, had acquired experience in caring for the sick through family vicissitudes. Medical knowledge was greatly appreciated in Holland at this time, however, and hospital organization was, as we have suggested in the Introduction, being specially cared for, and so doubtless these women had had opportunity for further training.

The first regular physician who came to New Amsterdam and stayed was the Huguenot, Johannes La Montagne, who in 1637 came from Leyden. He had received his degree from the University of Leyden and settled down to practice there. He married Rachel de Forrest, whose family emigrated to the New Netherlands—to be the ancestors of our New York de Forrests—and after her death Dr. La Montagne was tempted to follow them.

Dr. La Montagne's career as it has been traced carefully because of the special interest in his professional priority, gives an excellent idea of the character of the early medical practitioners in New Amsterdam. Far from being the unskilled irregulars or physicians who had failed elsewhere, some of them, at least, if they were like La Montagne, must have been rather enterprising pioneers for whom the monotony of life in Europe had palled, and who preferred to seek excitement and opportunity elsewhere. Dr. Johannes La Montagne was born in 1595, at Saintonge, on the Bay of Biscay. His family were among the first Huguenot refugees to Holland. As Jean Mousnier de la Montagne, he registered as a student of medicine at the University of Leyden, November 19, 1619. His medical studies seem to have been pursued somewhat irregularly, though we can trace his connection with the university as student and probably lecturer off and on for some seventeen years until 1636, when his family, with the de Forrests, decided to go to New Netherland. It was not until the following year (1637) that, with his wife and four children, he arrived in New Netherland, the fourth child, Marie, having been born at sea off the Island of Madeira.

He was a welcome addition to the colonists, and his services were soon in demand. His reputed skill in his profession gave him a status and he soon became a substantial citizen, so that Governor Kieft called him to a seat in his Council. He held a number of public offices, and received special commendation for his discreet rule as Vice Director at Fort Orange, the name at that time for

what is now Albany. His first wife having died, the doctor married Angeneita Gillis Ten Waert, the widow of Arent Corssen. This gave him relationships by marriage with some of the prominent families of the colony. It is easy to understand then how as a member of the Council the question of the practice of ship physicians in New York should be referred to Dr. La Montagne. He was, besides, an intimate friend of Governor Stuyvesant, and indeed accompanied the ex-governor on his journey to Holland in 1665 to defend his course in surrendering New Amsterdam to the English. Dr. La Montagne prudently swore allegiance to the new government, but we have no record of him after the coming of the English, and he seems to have died in Europe in 1670.

As physicians, we may well be interested in the fact that some five years after his landing Dr. La Montagne argued strenuously, lined up with Dominie Bogardus and De Vries, against Governor Kieft's proposition to massacre the Indians at Pavonia. In spite of their deprecations the order was given and hundreds of Indians, including many women and children, were sacrificed, most of them being murdered in their sleep. The colonists were to pay dear for this treacherous barbarity. Life outside of the fortified places became almost impossible and the Director would have been very willing to undo the evil effects of his utterly unjustifiable action, which, it is some consolation to know, had been accomplished in opposition to the advice of the Dominie and the physician.

There is an incident connected with the building of the first church in the New Netherland which makes it of interest to physicians. It was at the marriage of Sara Roelofs, the eldest daughter of Anneke Jans, to the surgeon Hans Kierstede in the year 1642, that "after the fourth or fifth round of drinking" De Vries, who had been contrasting the sacred edifices of New England with the small wooden church in New Amsterdam to the serious disparagement of Dutch piety, passed a subscription paper for signatures. He and the Governor had headed the subscription list with generous sums, and a considerable amount was secured. According to tradition, next morning, when the effect of the fourth or fifth round of drinking wore off, it is said that some of the company "well repented their generosity." Governor Kieft forbade any subscription to be withdrawn, however, and the contracts for the erection of a stone church were promptly signed. This may be the first time in New York that a banquet has proved the proper time to

have a subscription paper signed, though I may say that it was not the last time that a similar set of incidents were to occur with like sequels the morning after. Perhaps it may be worth while to note that while the contracts were let for twenty-five hundred guilders, this church, called St. Nicholas, when completed five years later, shared the fate of many another edifice planned at a banquet, for its actual cost had amounted by that time to 8,000 guilders—more than three times the original estimate. New York City has had many further examples of this same kind.

Rather early in the history of the colony we find special arrangements made with regard to midwives. They counted among the *zieckentroosters*, or comforters of the sick, but enjoyed special privileges and prestige, and were usually paid a rather liberal salary, according to the money value of those days. Among the first of them, of whom we have mention, was Eva Pietersen Evertsen, who received a definite salary from the Dutch West India Company under the first Governor. Tryntje Jonas, or Jans, has been already noted. Later we hear of Lysbert Direksen occupying this position in 1638, and by this time the value of the midwife's services were so much better appreciated that a house was erected for her at public expense by order of Governor Wouter van Twiller. Later we hear of Hellegond Joris being appointed midwife in 1655, and five years later the Council voted her a salary of one hundred guilders a year for attending the poor. This definite provision for medical care for those who were unable to procure it for themselves, is interesting as representing early hints of the development of social medicine. The *zieckentroosters* were all of them regularly in the service of the colony, and corresponded to the visiting nurses of our time, and must, as their name implies, have been the source of a good deal of consolation to the poor people of the time. Practically all of the obstetrical work of the city during the seventeenth and eighteenth centuries was done by midwives. Indeed, as Packard says in his "History of Medicine in the United States" (Lippincott, 1901) the practice of obstetrics by men was regarded with popular disfavor until well after the middle of the eighteenth century in this country. Some of the New York midwives, as Annetje Jansen, also known as Anneke Jan or Jans, became famous, and were looked up to as great benefactors. Early in the eighteenth century New York City passed a series of ordinances concerning the duty of midwives which show very clearly that a defi-

nite attempt was made to prevent various abuses. The text of the ordinance is for that reason very interesting:

It is ordained that no woman within this corporation shall exercise the employment of midwife until she have taken oath before the mayor, recorder or an alderman (the terms of which are prescribed), to the following effect: That she will be diligent and ready to help any woman in labor, whether poor or rich; that in time of necessity she will not forsake the poor woman and go to the rich; that she will not cause or suffer any woman to name or put any other father to the child, but only him which is the very true father thereof, indeed according to the utmost of her power; that she will not suffer any woman to pretend to be delivered of a child who is not indeed, neither to claim any other woman's child for her own; that she will not suffer any woman's child to be murdered or hurt; and as often as she shall see any peril or jeopardy, either in the mother or child, she will call in other midwives for counsel; that she will not administer any medicine to produce miscarriage; that she will not enforce a woman to give more for her services than is right; that she will not collude to keep secret the birth of a child; will be of good behavior; will not conceal the birth of bastards, &c.

New York seems to have been the first also to lift the ban of prejudice against men midwives, and one of them practised in New York even during the first half of the eighteenth century. The only record we have of him, it is true, is the notice of his death published on July 22nd, 1745, which at least makes it clear that he was a Doctor in Medicine and man midwife, though it also says rather emphatically that he was the only one of his kind in the city. If we are to trust the first lines of his obituary, however, he seems to have been held in high estimation, though so young at his death, for we learn from the sources that he was but twenty-eight. The death notice runs: "Last night died in the prime of life, to the almost universal regret and sorrow to this city, Mr. John Dupuy, M.D., a man Midwife in which last character may be truly said as David did of Goliath's sword 'there is none like him.'"

A few of the physicians who came over from Holland settled outside of New Amsterdam, especially up along the Hudson river, so as to give their fellow-countrymen who had come over to this region the benefit of their skill. Probably the best known of these was Dr. Abraham Staats, who settled at Fort Orange (now Albany) and became very well known among all the settlers of the surrounding countries. He was held in high estimation and was often appointed the representative for the colonists when making treaties

with the Indians. His medical skill exercised in behalf of the Indians had given him an estimation among them that made him of special value in this regard. In spite of this, however, his house at Claverack was set on fire by the Indians, in one of their uprisings in 1664, and his wife and two children perished. His son, Samuel, carried on the family name in the colony's history with distinction.

Young Staats was the first of the many New Yorkers to cross the ocean for the purpose of securing an education in medicine to return to practise his profession in his native country. His father, after he came from Holland in 1642, seems to have practised medicine for a time in New Amsterdam, where his son Samuel was born. After his medical education in Holland was finished, the son settled down to practise in his native town, now become New York, and came to be probably the best known physician of the colony in the seventeenth century. He died in 1716, having made not only a distinguished reputation as a physician, but a material success in his profession.

One of our distinguished physicians in New York in the second half of the seventeenth century was Samuel Megapolensis, who probably owes his place in history to his political prominence rather than to his medical skill. His career is interesting because it illustrates relations between the colonies of New York and New England that might not otherwise be anticipated. He graduated from Harvard College and afterwards from the University of Utrecht, receiving from the latter both a theological and a medical degree. The combination was not so unusual then as it became later. He was made the pastor of a church in New York, though he seems not to have entirely neglected his knowledge of physic so far as the benefit of his parishioners was concerned. He was one of the commissioners appointed by the Dutch to negotiate the treaty by which New Amsterdam was transferred to the English Crown, when its name was changed to New York.

Dr. Francis, in his anniversary discourse before the New York Academy of Medicine (1847), did not hesitate to say: "New York has been signally blessed in her physicians. Imperfect as are the records concerning our early Dutch Doctors, I find many prominent individuals among them who to medical erudition and scientific knowledge added experience in political councils and rendered services of no small consideration to the public weal."

Probably the first Irishman to practise in New York, for the

name in this form is a very common Irish name, though, of course, he might have been of Welsh origin, was Dr. J. Hughes, who is noted as a practising physician in the city as early as 1661. Some idea of the cosmopolitan character of the medical profession in New York at this early date may be gathered from the fact that about this time we have among the physicians and surgeons in New York such names as Alexander Curtis, Jacob L'Orange, Samuel Megapolensis, Henry Taylor, Hans Kierstede, Giles Geodineau and probably also for a time at least, Dr. Lockhart.

The first serious attempt at the formal regulation of the practice of medicine, of which we have a definite account, came shortly after the English took possession of New York City and assumed the government of the Colony of New York and certain neighboring territory. It was in 1664 that Colonel Nicolls, the personal representative of the Duke of York, appeared in Manhattan Bay with an English fleet and forced the Dutch to surrender Manhattan Island. A new government was at once set up and two delegates were summoned from each town in the Colony to draw up a Code of Laws, the Duke's Laws, as they were called, which the Colony in and around New York had to accept perforce. Dr. Toner calls attention to the fact that these laws applied to a number of other places besides Manhattan Island. We, accordingly, quote the passage from him, and also the special paragraph of the laws referring to the practice of medicine:

In these Duke of York's laws enacted about 1665 for the government of the Province of New York, when Nantucket, Martha's Vineyard, Normansland, and the Elizabeth Islands were considered as lying within the Duke's patent, a stringent law relating to churgeons, midwives and physicians was passed, which, as it may be found to possess some historical interest and is not generally available to readers, is given in full:

"Chirurgeons, Midwives, Physicians: That no person or persons whatever employed about the bodys of men, women or children, for the preservation of life or health as chirurgeons, midwives, physicians, or others, presume to put forth or exercise any act contrary to the known approved rule of art in each mystery or occupation, or exercise any force, violence, or cruelty upon or towards the body of any, whether young or old, without the advice and consent of such as are skillful in the same art (if such may be had), or at least of some of the wisest and gravest then present, and consent of the patient or patients if they be mentis compotes, much less contrary to such advice and consent, upon such severe punishment as the nature of the fact may deserve; which law, nevertheless, is not intended to discourage any from all lawful use of their skill, but rather to encour-

age and direct them in the right use thereof, and to inhibit and restrain the presumptuous arrogance of such as, through confidence of their own skill or any other sinister respects, dare boldly attempt to exercise any violence upon or towards the body of young or old, one or other, to the prejudice or hazard of the life or limb of man, woman or child."

Toner suggests that "in enumerating the names of the Dutch physicians who had from their learning, worth and skill attained eminence in the Colony prior to the English assumption of government in 1664, the names of Jan du Parck and Alexander C. Curtis should not be omitted. The latter, in addition to practising medicine, taught a Latin school. He returned to Holland about the time the English rule began." A number of other Dutch physicians seem to have preferred life at home in Holland rather than under the English in New Amsterdam, which now became New York. The majority of them probably remained, for among the prominent physicians in practice after the English possession were Peter Jansen van den Bergh, Hermann Wessels and Cornelis van Dyke.

A good many of the physicians of New Amsterdam were elected to political office, and were evidently considered substantial citizens of the colony. Family influence doubtless often meant much in this regard, and Gysbert van Imbroeck, who married a daughter of Dr. La Montagne, followed in his father-in-law's footsteps in political matters and in 1664 was one of the delegates of the Provincial Assembly.

The custom of having physicians in political office continued after the transfer of the government to the English, and even some of the descendants of the old Dutch were honored in this way. Toner has told us of Gerardus Beekman, the son of William Beekman, a leading citizen of the early Dutch rule who came to New Amsterdam in 1647 and held many positions of public trust. Gerardus Beekman was a physician, but was one of the members of Governor Lesler's Council, and after his overthrow and execution Beekman was tried for treason, convicted, and sentenced to be hung, but was pardoned. In spite of this unfortunate experience in politics he continued to be interested in political affairs and was a member of the Provincial Council under different governors. He died in 1724.

The physicians of New York colony during the eighteenth century are mentioned by Dr. John W. Francis in his anniversary discourse before the New York Academy of Medicine, 1847. Among

the best known of them were John Van Beuren, whose cognomen was not a family name, but was derived from his native village near Amsterdam. The name came to be adopted, however, as a family name, and with the "e" dropped has become a very familiar name in this country. John Van Beuren was a pupil of Boerhaave, just then at the height of his fame, and he was graduated from the University of Leyden. Not long after his arrival in New York, Van Beuren was appointed physician to the almshouse, a position in which he was succeeded by his son, Beekman Van Beuren, who was born in New York in 1727, but did not die until 1812, living through the stormy period of the Revolution into the nineteenth century.

Another New York physician of this time who also had studied at Leyden and whose thesis for graduation had been on that very important theme for that time, "The Use and Abuse of Bloodletting," was Isaac Dubois. Unfortunately, though the date of his graduation was 1740, he died in 1743, when probably very young. The records of the city continued to show physician officeholders, and Dr. John Nicoll who died in 1745, after having practised in the City of New York from before the end of the seventeenth century, had served as one of the judges of the court in Governor Lesler's time.

After the advent of the English as rulers of New York, English names begin to be frequent in the Colony, and among them Robert Brett and Thomas Thornbill, as well as Brinley, Brewer, Thomas, White, Adams, Graham are in the records. Scotch and Irish names as well as some Welsh names also occur in the professional lists.

The population of the Province of New York toward the end of the first quarter of the eighteenth century gives an interesting glimpse of the medical problems that were at hand. The total number of white persons in the Province at that time as given in O'Callaghan's "Documentary History of New York" (Vol. I, page 471) was 34,393. Of these 9,083 were men, 8,763 women, 8,500 male children, 8,047 female children. Curiously enough, in New York county itself there were nearly 300 more women than men, though there were four more male children than female children in the same population. A very important element in the population so far as health is concerned must have been the negroes and "other slaves." Of these there were altogether 6,171, or more than

one in seven of the whole population. There were 2,186 men, 1,810 women, 1,178 male children, and 997 female children.²

Ten years later (1731) the population of the Province of New York had increased by nearly one-fourth. There were now 43,508 whites, of whom 14,613 were white males above the age of ten years, 11,529 females above that age, 10,243 white males under ten years, and 6,673 white females under ten years. This discrepancy between the male and female children probably indicates defects in the census. In this document the classification of negroes and other slaves is changed simply to blacks, of whom there were now 7,231 in the Colony, or an increase of nearly one-fifth in number. Of these nearly 3,000 were males, 1,850 females above the age of ten and 1,400 black males under ten, and 1,044 black females under ten. The same discrepancy as to the number of females among the blacks as regards children is noted here as in the figures among the whites. Normally there should be more female than male children in a population, so that the figures, if dependable, probably indicate social reasons at work for the limitation of the less valuable female blacks, or perhaps signify less care in enumerating them because of their less value to their owners. The second census maker, or at least the author of the document on the matter, has this note on the subject: "It is remarkable that in New York there are above ten years 147 males and 995 females more than in Albany, and in Albany 1,029 males and 188 females under ten more than in New York, which is accounted for by this parts (*sic*) being a trading place and many of the males go abroad of course, many females lye fallor (*sic*) and perhaps in the country they are better breeders and I believe many younger."

The population continued to advance during the following decades. In 1746 there were 61,589 total population; in 1749, 73,448; in 1756, 96,765, of whom over 13,500 were blacks. In 1774 the estimated population of New York, according to a London document, cited in O'Callaghan, was 182,247, of whom 21,149 were blacks.

New York's first physician of distinction, whose name has deservedly secured an enduring place in history, not only for those

² Among the "other slaves" were perhaps counted the "redemptioners," though I doubt if it is known just how many, who had become slaves for debt, or who had sold themselves into bondage in order to get their passage to this country and who were bound for service for a certain number of years.

who are interested in the past for its own sake but because of what he accomplished in medicine in his time, was Cadwallader Colden. He was much more than a practising physician, for he did excellent work in botany and also in sanitary science, and lent added prestige to the medical profession in his time through the offices of Surveyor-General of the Province, Master in Chancery, and member of the Governor's Council, which he held successively until finally he was appointed Lieutenant-Governor. He is often referred to by his contemporaries and subsequent writers as Governor Colden, and, as during the absence of several governors and in the intervals between successive governors he often actually fulfilled the functions of that office, the title rightly belongs to him. His writings on medicine give us more information with regard to medical conditions in eighteenth century New York than can be obtained anywhere else, while his "History of the Five Nations," the story of the Iroquois Indians, well deserves a high place in the beginnings of American ethnology.

When he returned to America in 1716 he took up his residence in New York, where he spent the rest of his long life, so that there is sixty years of an active career to chronicle here. We are not sure how long Colden continued to practise for in 1720 he was appointed Surveyor-General of the Province of New York. All during his life, however, he continued to be interested in medical subjects, for there is a series of papers by him on climate and its relation to disease, as well as letters on various medical subjects. The year of his appointment as Surveyor-General he published his first medical article in this country, an "Account of the Climate and Diseases of New York." It is notable mainly for his declaration that "we have few consumptives or diseases of the lungs." He even ventured to suggest that "people inclined to be consumptive in England are often perfectly cured by our fine air." He adds "that the climate grows better every day as the country is cleared of the woods; and more healthful as all the people that have long lived here testify." He says finally that he is free to confess that "I prefer it to the climate of England, and I believe that most people who have lived any considerable time here and return to England will confirm this."³ A deservedly much better known and much

³ Each one of the newly settled portions of this country on the way West became a health resort for consumptives. Even Chicago, with its rude variations of climate, its often intense hot weather in summer and bitter cold

more significant medical article by Colden is entitled "The Fever Which Prevailed in the City of New York in 1741-42." He reviews in detail the dangers that might come from water, drainage, soil and impure air, and emphasizes the necessity for better ventilation among the poor, and improvement of the water supply, and above all the necessity for some public system of drainage. Fortunately, his official position added weight to his recognition as one of the most distinguished scientists of the country, and the authorities of the time took his suggestions and proceeded to the establishment of a plan of public drainage which proved to be of very great significance for the future health of the city.

Probably the most interesting of his papers on medicine for our time, however, is a letter which Dr. Colden wrote to Dr. Fothergill, of London, describing a manifestly contagious disease called the Throat Distemper, which had prevailed in New England in 1735 and subsequent years, the first cases of it being noted in New Hampshire, and then subsequently spread to New York and to the other colonies. This was undoubtedly diphtheria. It caused sad havoc among the children in the large families of the time. Three, four and even more children fell victims in the same family during this epidemic to the affection, which one American writer of the old time described as "the bladders in the throat." Manifestly this acute observer had noted the membranous patches to which diphtheria owes its Greek name, and which has continued even till our time to be so serious, though now controlled by the antitoxin treatment. Colden wrote a number of other papers on medical subjects, including his essay on the cause and remedy of the yellow fever.

Governor Colden's correspondence was a sort of clearing house for all the scientific ideas in America of that time, besides being an outlet and inlet for European scientific interests. We are in-

from the lake in the winter, was in the early nineteenth century recommended as a particularly healthy place for the tuberculous. Later on St. Paul came to be in its turn a similar health resort, and Dr. Trudeau in his time went there, though without being benefitted. It will not be surprising for those who recall these facts to have Governor Colden laud New York's climate as so beneficial. Nor will it be necessary, as a number of medical writers have done, including the editors of the *Medical Register* at the beginning of the nineteenth century, to suggest that New York's climate has changed very much for the worse in the meantime. The climate has remained the same, but the health resorts for consumptives move ever farther away, and it is always in some distant place that the tuberculous are sure to be cured.

terested here only in his correspondence on medical matters, but this contains the most varied material. Like many others of the middle of the eighteenth century, Governor Colden was taken with the idea of tarwater being a panacea for most of the ills of mankind, and he tells of cures that he himself had witnessed and that he had learned from correspondents. Bishop Berkeley was the great tarwater advocate, but Governor Colden made a good second. Tarwater cured as many diseases in the mid-eighteenth century as alcohol did in the mid-nineteenth, or as the coal tar drugs at the beginning of the twentieth.

What attracted attention always was "cures," and any physician who was not perfectly sure that he had a number of these available was not likely to be estimated very highly. A contemporary of Governor Colden's, but who lived on to a very advanced age until 1812, suffered not a little in his estimation as a physician because he was too intent on the science and not the practice of medicine.

This was Dr. James Smith, a brother of the well-known historian of Colonial New York. He was graduated in medicine at Leyden, and was according to tradition a very learned but not a very practical physician. He represents the close of Colonial medicine.



CHAPTER III

SURGERY IN THE COLONY

THE surgeons, or chirurgeons, as they were called in the quaint English of the seventeenth century, a term that emphasized the feature of their work as handicraftsmanship, were earlier the subject of attention from the legal authorities in New York than the physicians. The reason for this doubtless was that surgery, after a brilliant series of triumphs in the later Middle Ages, was at one of the low ebbs of its history during most of the seventeenth century, and the barber surgeon was still an institution familiar to all. A good many men who set up as surgeons or chirurgeons (to the serious danger of their clientèle, as may be readily understood) were men of very little education and with only a small amount of practical training. Many of those who at various times settled in New York were men who had been willing to accept even the post of ship surgeon on board a sailing vessel, a position at that time so trivial as to hold out no inducement to a trained professional man. Practically anybody who had a little knowledge of drugs and a little skill with a lancet in opening abscesses, acquired perhaps in the care of animals, was likely to be accepted for the post by the ship captains desirous of shifting the responsibility for their sailors' health from their own shoulders. Some of these who happened to land in New York often proceeded on the strength of their ship experience alone to set up as practising chirurgeons.

Probably the first chirurgeon to settle New York colony for a time was Herman Meynderts Van den Boogaerd, who arrived in New Amsterdam in 1631, having come as the surgeon of the ship *Eendracht*. He was very young, probably in his early twenties, but he was to make for himself a position of influence in the colony. He was appointed surgeon to Fort Orange in 1633, and is believed to have been the leader of the party which in 1634-35 arranged for closer relations between the colony and the Seneca and Oneida Indians. Later he was commissary of stores at New Amsterdam,

and in 1640 was the head of a party which on the good ship *Vreede* made a trip to the southern part of Staten Island to cement colonial relations with the Raritan Indians. The Indians, however, came near leading him into an ambuscade in the narrow Kill van Kull, and he and his party barely escaped from the arrows showered down upon them from the two shores. Later he became the Commissary at Fort Orange, and to his bravery and ready wit Father Jogues, the Jesuit missionary, probably owed his life after his escape from the Mohawks. Dr. Van den Boogaerdt seems to have lost his life before he was forty through the treachery of the Indians, but in the meantime he had made a permanent place for himself in colonial history.

O'Callaghan, in his "History of New Netherlands," has the name of William Deeping, evidently an Englishman who was chirurgion to the ship *William* of London, trading in the Hudson, April, 1633, as also practising for a time in New Amsterdam.

As the colony became more important, in the course of time more and more vessels dropped into the harbor, and as some of them stayed for rather long periods the ship surgeons were sometimes called upon to exercise their skill on others besides the actual members of the crew. An abuse easily crept in in this matter, and so the Council of New Amsterdam handed over to Dr. La Montagne authority to issue a permit to those who seemed to be sufficiently expert in medicine and surgery to practise in the colony. The ordinance granting him this power is the first legal enactment for the regulation of the practice of medicine in New York. As some vessels that were about to sail from New York wished to engage surgeons for the voyage, the additional duty was laid upon Dr. La Montagne to judge the fitness of the barber surgeons offering themselves for such posts. The ordinances in these matters were passed after a petition to this effect had been presented by the chirurgions of New Amsterdam.

Toner ("Annals of Medical Progress," Washington, 1874) has also called attention to the fact that, just as it happened in England, there came to be jealousy among the barber surgeons over the fact that certain men set up as barbers who were not surgeons. The idea of the barber being a surgeon had become so generally accepted that practically any one who did barbering was likely to be applied to for surgical procedures, and the barber surgeons apparently tried to prevent this abuse by securing definite regulation

of the practice of shaving. The following is from the Dutch records, February 2, 1652:

On the petition of the chirurgens of New Amsterdam, that none but they alone be allowed to shave; the director and council understanding that shaving doth not appertain exclusively to chirurgery, but is an appendix thereunto; that no man can be prevented operating on himself, not to do another a friendly act, provided it be through courtesy, and not for gain, which is hereby forbidden." It was then further ordered that "Ship barbers shall not be allowed to dress any wounds nor minister any potions on shore, without the previous knowledge and special consent of the petitioners, or at least of Dr. La Montagne.

The properly trained surgeons deserving of the name who came from the Mother Country at this time were well up to European standards. Indeed, Holland was at this time the home of a progressive reawakening in surgical as well as medical teaching. New York was fortunate then in her relations with Holland in this regard. We have already noted the interest of the Dutch mother country in anatomy. It is an invariable rule in the history of medicine that wherever and whenever careful studies are made in anatomy, surgery gradually improves and surgeons are enabled to extend their helpfulness to more and more patients. The many pictures of lessons in anatomy serve to show that not only was there no foolish popular prejudice against that most important feature of surgical training, dissection, but that men were proud to proclaim the fact that they spent their time in these careful studies. Any one who wishes to appreciate properly the influence for good that this interest in dissection had over surgery, should study the career of Hendrik van Roonhuyze. He was acquiring his experience just when New York was most deeply under Holland influence, about the middle of the seventeenth century. He was a very skilful operator, doing all sorts of external operations, such as for wry neck and hare-lip, and being the first according to Stromeyer to develop orthopedic surgery in the West of Europe. His "*Heelkonstige Aanmerkingen*" has been described as the first work in operative gynaecology in the modern sense. (Garrison). The copper plates show enough to make it clear that even laparotomy was not uncommon at this time. He practised Cæsarean section rather frequently, and his "*Annotations*" contain case reports of the successful treatment of extrauterine pregnancy and rupture of the uterus. Dr. Howard Kelly, is as we have said elsewhere, rather en-

thusiastic about his description of an operation for vesico-vaginal fistula, which is of thoroughly scientific and practical character.

With such men as their masters it is not surprising that even during the course of the first generation of the history of the colony the surgeons of New York should have developed not a little *esprit de corps* and a very definite feeling of professional dignity. The first formal historical notice of them that has come down to us demonstrates the need of it, for in 1657 there was an ordinance passed by "the schout, burgomaster, and schepens," imposing a sort of detective duty on surgeons. This gave notice to all surgeons of the city that "when they are called to dress a wound they shall ask the patient who wounded him, and that information thereof be given to the schout" (sheriff). Dr. Toner remarks that such a regulation as this of course "could not be submitted to by the profession and no doubt was a dead letter."

One of the earliest of the formal surgeons and a man who came into some prominence in the city because of his social connections, was Hans Kierstede, the story of whose marriage to Anneke Jans' daughter, with a collection for a stone church at his wedding, is told in the chapter on "Early Medicine." He arrived in Manhattan, March 28, 1638, along with Surgeon Gerritt Schult. They accompanied William Kieft, Director-General of the West India Company for the New Netherlands. Kierstede continued to practise in the colony very successfully for some thirty years, for there are definite evidences of his presence here. after 1660. In 1658, according to the *New York City Medical Register*, there were but three surgeons in active practice in New Amsterdam—Kierstede, Varvanger and L'Orange. Jacob Hendrickson Varvanger was one of a series of surgeons who had come over as ship surgeons about the middle of the seventeenth century. Others arrived not long after, most of them being Hollanders, but some of them were of French or English birth, and we have such names as Peter Breucht, Isaac Jansen, Jacob Mallenacy, as well as William Hays and John Pau.

The first member of the medical profession to live in what is now Brooklyn was Paulus van der Beeck, who came to New Amsterdam with a company of soldiers as their surgeon in 1643, at a time when Governor Kieft had proclaimed his lamentable war upon the Indians. After the war Van der Beeck settled on a farm, the

site of which has been calculated to be what is now the corner of Third avenue and 28th street, in the borough of Brooklyn. Like many other of these young surgeons who came over as ship's doctors or military surgeons, Van der Beeck occupied himself with a good many other things besides medicine. He held the position of tax or tithe collector for a time, besides working on a farm, and was also the licensed runner of the ferry between Brooklyn and New York. This multiplicity of duties led to the neglect of some of them, and at one time he was complained about to the Council for "keeping passengers waiting half the day and night before he would carry them across the river." It seems that he was protected from competition by his license, and he seems to have taken advantage of its privileges some times to the inconvenience of those whom he was expected to serve, thus perhaps setting the bad example for public service licensees around New York which has been so faithfully followed in more recent generations.

Some of the men who began practice as surgeons in New Amsterdam subsequently removed to other places and continued their professional work there. About 1660 one of the leading surgeons of New Amsterdam was Jacob D. Commer, who subsequently removed to New Amstel, now Newcastle, Delaware, perhaps as a consequence of not feeling entirely comfortable under the English rule which had been established in 1664.

One of the most distinguished members of the profession in the city just before and after the transfer of New Amsterdam from the Dutch to the English, was Johannes Kerfbyle, a native of Holland, and a graduate of the medical school of the University of Leyden. He had already been prominent as a citizen, as well as enjoying a large professional practice before the transfer of the colony. In 1691 the city authorities asked him to make the post mortem examination of the body of Governor Sloughter, the first formal medico-legal autopsy in this country. He was elected a member of the Provincial Council in 1698, and was still young enough in 1704 after the death of his first wife, Catherine Hug, to marry Margaret Provoost.

The Sloughter autopsy is one of the important medical incidents of colonial life. I have tried to find the original report, but it has probably not been preserved. It is possible that this original report was sent to England with a letter printed in "Documents Relating

to the Colonial History of the State of New York'' (Vol. III, page 794), which states that a copy of the physicians' report is enclosed. The Calendar of State Papers in the Public Record Office of London shows that the letter was received there, but makes no mention of any separate report accompanying the letter. It is possible as suggested by Mr. Peter Nelson, head of the Manuscript Section of the New York State Library, that what was sent was merely an abstract of the report made by the Council, and not the formal report of the physicians and surgeons who made the autopsy. Governor Sloughter had made many enemies by his execution of Jacob Leisler after the Leisler revolution in New York. The governor seems to have been a weak man, and Smith, the early historian of New York, suggests that he had been deliberately made drunk in order to secure his signature to the papers authorizing the execution. Not long after, he died suddenly, and there was suspicion of foul play. Surgeon Kerfbyle was asked to make the autopsy, and he associated with himself for the duty five other physicians and surgeons of the city whose names show how cosmopolitan in its origin was the medical profession of New York at that time. They were John Lockhart, who was a Scotchman; Lucas van Efinchoone, who is usually set down as having been a German, and not a Dutchman in spite of the "van" in his name; Thomas Thornhill and Robert Brett, who were Englishmen; and Gilles Gaudineau (whose name has two or three other alternative spellings in the documents of the time and who signs himself chirurgo-physician), a Frenchman. The council ordered that eight pounds eight shillings be paid by Mr. Collector to the chirurgeons for opening and inspecting the said body.

The abstract of their report as given in the minutes of the Council, Vol. VI, page 42, under date of July 30, 1691, is as follows:

The Doctors and Chirurgeons appointed to view the late Governour's body pursuant to the order of this board returned under their hands and seales, That the late Governour dyed of a defect in his blood and lungs occasioned by some glutinous tough humor in the blood which stopped the passages thereof and occasioned its settling in the lungs, which by other accidents increased until it caryed him off of a sudden and for further satisfacon to the council made Oath that they knew no other Cause of his Death.

Ordered that Eight Pounds and Eight Shillings be paid by Mr. Collector to the Chirurgeons for opening and inspecting the said body.

The report probably indicates that there was an embolism of the

lungs, though the wording is such that possibly other explanations might be found to fit the case. This would explain the sudden death, however, and the report put an end to all question of further legal action as to the governor's death.

The surgical records of New York in colonial times are fragmentary, and only occasional names of men who attracted special attention for some reason have come down to us. With the breaking out of the Revolutionary War, the more complete records of the army surgeons show us how many members of the profession who felt themselves capable of doing surgical work must have been in the colony, since so many were found to serve with the Continental army. The number of these men who died forty years or more after the Revolutionary War shows that the surgical opportunities of the conflict must have as always attracted the attention particularly of the young men.

Dr. Toner noted the names of all the men who have places in the lists of army surgeons from New York during the Revolution. Many of them served only for a time but some of them served during the greater part of the struggle:

George Campbell, Andrew Cragie, George Draper, John Elliott, Stephen Graham, Henry Moore, Abner Prior, Thomas Reed, Nicholas Schuyler, William P. Smith, Caleb Sweet, Malachi Treat, Samuel Woodruff, and Joseph Young.

Caleb Austin was commissioned July 1, 1777, in Colonel John Lamb's regiment of New York artillery. John Cochran was Director-General of the medical department.

Samuel Cook was commissioned November 16, 1776, in Colonel Lewis Dubois's regiment, in which he remained till the close of the war.

Elias Cornelius was commissioned in Colonel Israel Angell's regiment of Rhode Island troops, at the age of 19 years, in opposition to the wishes of his parents, who were attached to the British interests in America. He was captured and confined in New York but made his escape, rejoined the army, and remained at his post until the latter part of the year 1781. He died June 13, 1823, at Somers, N. Y., at the age of 65.

Surgeon Mordecai Hale died December 9, 1832.

Ebenezer Hutchinson was commissioned in Colonel Lewis Dubois' regiment, June 12, 1778.

Isaac Ledyard entered the medical department of the army in March, 1776.

Surgeon Benjamin B. Stockton died June 9, 1829.

Josiah Watrous, commissioned in Colonel Ebenezer Stevens's regiment of artillery, September 4, 1777; was stationed at West Point until January 8, 1779, when he resigned.

Surgeon John F. Vacher died December 4, 1807.

William Wheeler, commissioned in 1777, resigned January 8, 1779.

Henlock Woodruff entered the medical department of the army in 1775.

Dr. Peter van der Lynn, a native of Holland, was a surgeon in Colonel Paulding's regiment during the Revolution. In 1777, when Fort Montgomery was attacked, he and General Clinton escaped from being taken prisoners by swimming across the Hudson.

Daniel Menema, a native of New York, served as surgeon in the Second New York Regiment to the close of the war. He was a man of extensive acquirements and of elegant and affable manners. He was a member of the Society of the Cincinnati. In 1806 he was president of the Medical Society of Queens County. He died at Jamaica, L. I., January 20th, 1810.

Benjamin Welles was surgeon's mate and then surgeon from 1777 to the close of the Revolutionary War. After the war he settled in Wayne, Steuben county, N. Y., where he practiced with reputation, and died April 19, 1814.

Samuel Stringer, a native of Maryland, having studied medicine, was commissioned in a British army, and was at Quebec in 1758. At the close of the war he settled to practice at Albany, N. Y. When the Revolutionary War commenced, Congress appointed him director-general of hospitals in the northern department. He was a man of ability, but resigned his commission in 1777 and returned to resume a practice which was large and lucrative to the close of his life. He died July 11, 1817, aged 83.

John Thomas, a native of Massachusetts, served as surgeon during the war. After peace was declared he settled and practiced his profession at Poughkeepsie, N. Y., where he died in 1818.

David Shepard, a native of New York, raised and commanded a company at the breaking out of the Revolution. He resigned the captaincy for the position of surgeon. He was in the battle of Bunker Hill. He died at Amsterdam, Montgomery county, N. Y., December 12, 1818, aged 74.

Nicholas Schuyler, a native of New York, entered the Federal army as surgeon at Albany, April 1, 1777. He was an ardent patriot and an active and intelligent surgeon, performing arduous and valuable services during the war. He died at Troy, November 24, 1824.

Thomas Reid was a surgeon of the Revolutionary army, and during the last two years of the war served in Colonel Luyster's New York regiment. He died at Johnstown, Montgomery county, N. Y., September 18, 1826.

Moses Willard served as surgeon's mate and as surgeon during the war, a portion of the time in Lieutenant-Colonel Willet's regiment.

Moses Younglove was surgeon's mate, and as surgeon served with reputation in various departments. He was a gentleman of various accomplishments and of fine executive ability, was representative in the legislature, and held other official positions.

Walter Vrooman Whipple was a surgeon in the Revolution. He accompanied the army to Canada and was actively engaged.

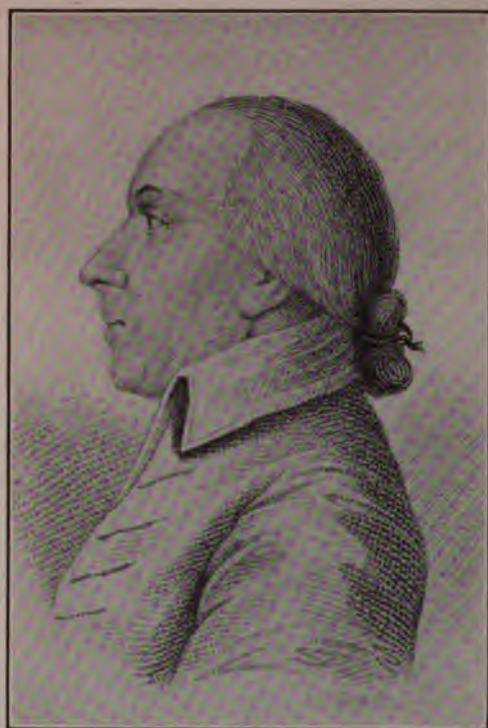
Dr. J. Cochran, of Pennsylvania, studied medicine in Lancaster, Pa., with Dr. Thompson; was a surgeon in the Revolution; after the war settled in Albany; he was on special reconnoissance, of hardship and danger, for General Washington, April 10, 1777; was appointed surgeon-general of the middle department, and in October, 1781, director-general of the hospitals of the United States. He died April 6, 1807, aged 76.

A number of the surgeons who served in the Revolutionary War reached prominence afterwards. Some of them settled in New York City and some of them in the smaller towns up-state. Poughkeepsie's first prominent physician was Dr. John Thomas, born at Plymouth, Massachusetts, April 1, 1758, who entered the Continental army at twenty-two, served as a surgeon throughout the war, and then settled at Poughkeepsie, where he acquired a very lucrative practice. It is probably an index of the retirement of many loyalists from New York to that neighborhood, that the first prominent surgeon-physician of White Plains was Alexander MacDonald, a Scotchman who had been for some time a resident in Canada and who, though educated in medicine in Philadelphia, served during the Revolution as a surgeon in the British army.

New York City received three important additions to its surgical workers from the surgeons who had served during the Revolution. Dr. Ebenezer Crosby, the surgeon of the New York Guards in the Continental army, a native of Massachusetts and a graduate of Harvard, who finished his medical education at the University of Pennsylvania, settled down in New York after the war. He was elected Professor of Surgery in Columbia College, but his early death in 1788 deprived that institution of a very promising personality. A second prominent New York surgeon of Revolutionary training was Dr. Charles McKnight, of Irish descent, as Toner notes, though born at Cranbury, New Jersey, in 1750. He graduated from Princeton in 1771, studied medicine in Philadelphia, and then enlisted as a surgeon in the Continental army. He was made senior surgeon of the Flying Hospital in the Middle Department of the Colonial military organization. He, too, died young; but one of his cases, the successful removal of an extra-uterine abdominal fœtus, was reported in the "Memoirs of the Medical Society of London," and has given him a place in history. Some of the details of the case may be found in the chapter on "The Surgical Specialties."

One American surgeon who served in the Revolutionary War had had the advantage of some experience during the preceding French and Indian War and also of studies in London and Paris. This was John Jones, who held the chair of surgery in New York's first medical school, and as the author of the first volume on medicine written and published in this country occupies a unique place in American medical history. He is the most distinguished pioneer surgeon of American history. He was born at Jamaica, Long Island, in 1729, three years before Washington, a relation that fixes his place in history very well. His ancestors were Welsh, but some of them were from Pennsylvania and so when he resolved to study medicine it was natural that he should be apprenticed to Dr. Cadwalader, of Philadelphia, who was probably the best known surgeon in this country at this time.

Fortunately John Jones was so situated from a financial standpoint that, after a single year in Philadelphia, he was enabled to go to Europe to complete his medical and surgical studies. In London he came under the influence of John Hunter and Percival Pott. Hunter, though but a raw country lad who had himself come up to London only a few years before, but a year older than Jones, was already teaching anatomy on his own account and inspiring a group of young men with something of his own enthusiasm for actual observation. To have had Hunter for a teacher was much, but young Jones had the fortunate additional opportunity of becoming a student of Percival Pott, after whom Pott's Disease is named. Pott had begun his service at St. Bartholomew's Hospital some five years before the young American's arrival there, and his thoroughly simple practical methods were just the thing for the enterprising student who was to mean so much for American surgery. Jones was not satisfied to limit his education to his English experience, however, so the next year found him under Petit and Le Dran in Paris. Petit was the inventor of the screw tourniquet and of improvements in amputations, and though he died that year, this did not occur before he had deeply influenced the young American. This French surgical training particularly fitted Jones for the rather extensive military experience that he was to have a few years subsequently in America during the French and Indian War, and then afterwards in the Revolutionary War, where his surgical ability was to mean so much for the organization of this branch of the service for the colonists.



JOHN JONES

After some anatomical work with the elder Monroe at Edinburgh, and with a degree in medicine from the University of Rheims, Jones returned to New York to practise. He was the first to do the operation of lithotomy in this city, and so successfully as to attract wide attention. Cases for the operation came to him from all the middle and eastern colonies, so that according to James A. Mease, Jones "had acquired a facility in operating to which few surgeons have arrived. I have seldom known him more than three minutes in a lithotomy." As no anæsthetic was given, time was an extremely important factor for the operation, for patients could not be brought to face a long siege of slow cutting in so tender a region, and Jones' skill and rapidity gave him a great reputation. He was able then, the first in New York, to limit his practice to a great extent to surgery. He did not give up his interest, however, in obstetrics.

It was not surprising then that when the French and Indian War broke out, Dr. Jones became the surgeon to the American troops. This gave him a fine experience in military surgery, and he was so successful that his fame spread throughout the army, and when Baron Dieskau was wounded and captured at Lake George, he asked to be put under Dr. Jones' care.

On his return to New York, Jones gave characteristic expression to his independence. Thacher tells that "some of the physicians of New York entered into a resolution to distinguish themselves by a particular mode of dressing their hair." The wearing of a wig of professional cut and special form was determined upon. Jones refused point blank to don the "new fashioned bob," and it is said that for a time he lost some consultations as a consequence of this. There are those who have ventured to say in comment on this that New York has often since had a tendency to follow after fashionable consultants, yet always enterprising men from outside the charmed circle are constantly breaking in and making themselves a force for real professional work and not merely professional fads. This was the first little revolt in New York against the substitution of artificialities for genuine professional ethics, but was typical of a temper that was to make itself felt later.

It is easy to understand that Dr. Jones with his wide experience in association with the men who were doing the best anatomy and surgery in the world in London, Edinburgh and

Paris, followed by his extensive military experience during the French and Indian War, in combination with his own thoroughgoing practical ways, made a good teacher of surgery. His students got to like Jones very much and he became a figure in the life of the time. Much has been written about him and always with affectionate reverence. When the Revolution broke out, the New York school was broken up by the six long years of occupation by the British, as well as by the split in the faculty growing out of differing views as to what constituted patriotism. Jones volunteered for surgical service with the Continental armies, and wrote for the Revolutionary surgeons the little book "Plain, Concise, and Practical Remarks on the Treatment of Wounds and Fractures." His book contains only one case of personal observation, but that was of a sufficiently serious character to give it a noteworthy place in American surgery. It was a case in which a wound of the head though apparently only of slight character at first had been followed by delirium which lasted for eighty days. Trephining and drainage brought prompt relief and eventually complete cure. The story of it doubtless saved many lives during the Revolutionary War, for it made it very clear that where compression of the brain existed, relief must be afforded by decompression or the consequences would surely be serious.

Of Dr. Jones, Mumford says in his "Surgical Memoirs" (N. Y., 1908), "American surgeons must look back to John Jones, of New York, as the first of their eminent professional forbears." He is worthy of consideration, however, for much more than mere priority in time. He was evidently a thoroughly sensible, eminently practical and enterprising American surgeon, the type of his colleagues of a century and a half later, and with a feeling of patriotism that led him to sacrifice years for the benefit of his country in the Revolutionary War and risk the success of his whole career, though as a New Yorker he must have been brought up in the midst of rather strong Royalist surroundings. Unfortunately he died very shortly after the Revolution.

CHAPTER IV

MEDICAL EDUCATION AND SOME EARLY LEADERS IN MEDICINE

WHILE owing to rather intimate relations with Holland and England, where medicine was being cultivated in a true scientific spirit, medical conditions were not so lacking in serious scientific features as has sometimes been said, the colony was of course handicapped by distance from these European centres and the lack of facilities for the education of physicians. Medical education had to be organized, and this took some generations of development.

In the Colony itself, medical education at first consisted of apprentice work with a physician, and then an assistancy with him or some other busy practitioner of medicine until it was felt that independent practice might be taken up with reasonable success. This somewhat loose system left the practice of medicine open to rather easy entrance, and yet seems to have worked out much better than might have been expected. The danger to the people was much more from the coming in of pretenders to medical knowledge from Europe rather than from the too ready assumption of the duties of the physician by native-born inhabitants.

There were some abuses connected with this system of medical apprenticeship, not only as regards medical education, but also as to the apprentices themselves. Occasionally a physician took advantage of an apprentice's presence near him to have him do a good deal of menial work around the office and house and even the stable. Undoubtedly under the circumstances, ambitious medical students submitted to impositions that they felt should be resented, but their position and the prospect of a professional career kept them submissive. At times in the eighteenth century these apprentices were even college graduates, though usually graduates of such young years that their classical education could

not have been very high. Many of them had a firm foundation of academic training, however, on which they built an excellent superstructure of knowledge in after life. Some of the most distinguished physicians of the country, as, for instance, Dr. John Bard, Dr. Benjamin Rush and Dr. Daniel Drake, served their apprenticeship and looked back on it as time well spent.

As regards the preliminary education of the physicians of the colonial times, it was, strange as it may appear, much better than the average of the middle of the nineteenth century and even later. Many of the medical students had an excellent basis of general education at least, and this their professional studies broadened into a real liberal education later in life. The thorough awakening of interest in the intellectual life before they took up the study of medicine, kept them from being narrowed by the merely practical side of their profession, so that it is not surprising that a great many of them had broad educational and political interests in the communities of that time. Dr. Morton in his "History of the Pennsylvania Hospital" comments particularly on the number of young men who crossed the ocean under the most difficult circumstances in order to complete their medical education, and who proved worthy in every way of the time and expense thus devoted to their professional studies. Dr. Morton says:

We find that the professional men of the seventeenth and eighteenth centuries were generally much better educated than most of their successors of the present time. Almost without exception they were classical scholars. Their graduating theses must be written in Latin. Travel was essential, notwithstanding the encumbered modes of motion to which they were subjected. Leyden, Paris, Edinburgh, London, Oxford, Upsal, Bonn, and to some extent Vienna, Berlin, and the Italian schools, received and honored them; they, as a rule, by their subsequent career, equally honoring the places which they visited and where they sojourned. They were also men of affairs. It is surprising what a part they took at home in politics (in its broad sense) and government. They were good soldiers, and freely offered themselves and their services to their country in time of need.

Dr. Stillé, in his "Life of John Dickinson," calls attention to the number of Americans who went to study medicine in Edinburgh just before and after the Revolution. The list of graduates in medicine of the University of Edinburgh shows during the thirty years from 1758 to 1788 the names of no less than sixty-three

Americans. It is curiously interesting to note, as he does, that but one of these students came from the New England colonies. We have grown so accustomed to think of New England, mainly because of her own always interesting claims in the matter, as a pioneer and constant leader in things intellectual, that it seems hard to realize that the Middle and Southern States were much readier to make sacrifices for the sake of the intellectual life, and were always represented by many more students in Europe than New England was. How well New York was represented among these medical student pilgrims to Europe when the voyage was so time-taking and expensive as well as actually dangerous, will be seen in this and subsequent chapters.

The term "Doctor" was not employed in the colonies until well after the middle of the eighteenth century, but a definite distinction was recognized between physicians who were only permitted to practise because of the completed apprenticeship and those who had graduated at a regular medical school. As early as 1636 the Assembly of Virginia passed an act providing that those who had served apprenticeships as surgeons and apothecaries should receive five shillings a visit and university graduates ten. Considering the value of money at that time at least five times what it is at present, these were excellent fees. The public opinion that brought about this legislation in Virginia doubtless existed also in New York, and yet physicians by apprenticeship often came to be highly thought of and sometimes proved more successful practitioners of medicine than their university brethren. Henderson says, "Many of these apprentices doubtless proved as successful physicians (and success is the usual test of merit) as some of their more fortunate colleagues who boasted an M.D. of Leyden, Aberdeen or Cambridge, and slew their patients *secundum artem*."

Dr. Toner in his "Annals of Medical Progress" has summed up the general state of medical practice at the time of the Revolution. The picture is not very favorable, but it gives a true idea of the state of medical affairs in the country.

It is probable that at that time of the Revolution there were not living in all the colonies 400 physicians who had received medical degrees; and yet, it is stated elsewhere, there were presumed to be over 3,500 practitioners. The American colleges had up to 1776 in the aggregate issued but fifty-one degrees, including that of bachelor of medicine. At the close of the century those who had received degrees from American institutions

did not number 250, but probably five times this number had attended one course of lectures at the different colleges, and were then in practice. The colonists at first, it would seem, rather preferred to patronize the medical man who was also minister, farmer, merchant, or mechanic, in addition to being a physician. Nor is it strange that a population in a new country, compelled to be industrious, frugal, and primitive in their habits, should welcome those who most nearly adopted their own mode of life. It will be remembered that there were neither medical clubs, institutions, quizzes, nor clinics, to aid the medical students; and the libraries of medical men, as a general fact, contained but few works, and those were text books of the most general character. There was, perhaps, not a medical library in the country prior to the Revolution that would have numbered one thousand volumes, and the vast majority of physicians did not have fifty. From these facts the advantages or rather want of advantages of the early medical student may be inferred. The great majority of practitioners of medicine throughout the colonies down to the Revolution were never enabled to attend lectures, visit hospital clinics, or, as it was termed, walk the hospitals, for such institutions did not exist in this country. Students having concluded the term for which they engaged to read with a physician, they commenced their career as practitioners. The practice, however, was quite common for the student to study in the office of some physician enjoying a reputation for surgery or for the treatment of fevers, or specially noted for some branch of his profession, for a year or two, and then to go to the office of another who enjoyed a similar reputation for excellence in another branch; but the usage was general that the young physicians left the offices of their preceptors to commence practice. In but a few states were licenses or certificates required, and these were easily obtained.

The first attempt at the formal teaching of medicine in this country was doubtless the private course in human anatomy offered in New York by Dr. John Bard and Dr. Peter Middleton, probably before 1750. There is an address by Caspar Wistar in which he mentions the fact that Thomas Cadwalader, a Philadelphian who had studied under William Cheselden in England, after his return to America made dissections and demonstrations for the instruction of the elder Dr. Shippen shortly after his return. This would apparently be in the early thirties. It is probable, however, that this must not be considered so much an organization of teaching as a demonstration for an older friend in the profession of some of the knowledge that a young man had acquired during his medical studies abroad. Dr. Hosack in his inaugural discourse at the opening of Rutgers Medical College in New York City declared that "the first attempt for the purpose of imparting medical instruction in this country by the dissection of the human body was made as early as the year 1750 by two

eminent medical men (of New York), Dr. John Bard and Dr. Peter Middleton."

The first formal teaching of anatomy as a branch of medicine in connection with a regular educational institution, was a course of lectures given at King's College (now Columbia University) New York, in 1763, by Dr. Samuel Clossy (or Clossey), a graduate of Trinity College, Dublin. Five years later, in connection with Samuel Bard, the son of Dr. John Bard, and Dr. Peter Middleton, a medical department was established in connection with King's College, and here the first medical degrees given in this country were conferred.

In the meantime New Yorkers desirous of studying practical anatomy for the sake of medicine had been afforded the opportunity to do so long before the establishment of a regular medical school as is to be seen from an advertisement in the *New York Weekly Postboy*, January 27th, 1752, in which the announcement is made of a course in anatomy to be given (curiously enough) in the city of New Brunswick. This was meant to attract the attention of New York physicians, and it is a little hard to understand why the course was to be given at New Brunswick. New Jersey is one of the few States where in the past generation there have been no medical schools and the reason for this has been partly that the crowded centres of New York and Philadelphia furnished more abundant clinical material and attracted the students, but also because no anatomical material was provided by the State laws. That New Jersey should have been one of the first of the colonies to offer anatomical courses if not actually the first is noteworthy. The advertisement runs:

Whereas Anatomy is allowed on all Hands, to be the Foundation both of Physick and Surgery, and consequently without some knowledge of it, no Person can be duly qualified to practice either: This is therefore to inform the Publick: That a Course of Osteology and Myology, is intended to be begun, some time in February next, in the City of New Brunswick. (of which Notice will be given in this Paper, as soon as a Proper Number has subscribed towards it.) In which Course, all the human Bones will be separately examined, and their Connections and Dependencies on each other demonstrated; and all the Muscles of a human Body dissected; the Origin, Insertion, and Use of each, plainly shewn, &c. This Course is proposed to be finished in the space of a Month. By

THOMAS WOOD, Surgeon.

Such gentlemen who are willing to attend this Course, are desired to

subscribe their Names as soon as possible, with Mr. Richard Ayscough Surgeon, at New York, or said Thomas Wood, at New Brunswick, paying at the same Time, Three Pounds, Proc. and engaging to pay the said Sum of Three Pounds more, when the Course is half finished.

N.B. If proper encouragement is given in this Course, he proposes soon after, to go thro' a Course of Angiology and Neurology; and conclude, with performing all the Operations in Surgery on a Dead Body: the use of which will appear to every person, who considers the Necessity of having (at least) Seen them performed; before he presumes to perform them himself on any living Fellow Creature.

While Philadelphia had the first course of regularly established lectures in medicine, and organized the first complete medical school in this country, the first degrees of Doctor in Medicine were not conferred in Philadelphia in June, 1771, as medical historians used to say, for New York had anticipated the city by the Delaware in this respect. The medical school already mentioned, established in 1768, in connection with King's College, gave the Bachelor of Medicine degree in 1769, and the first degree of Doctor in Medicine conferred (not on this continent, as has often been said, for Mexico and South America had long preceded us, but in the territory that is now the United States) was bestowed here in New York in 1770, upon Robert Tucker, and the second in May, 1771, upon Samuel Kissam.

The standards of these early medical schools were not nearly so low as might perhaps be imagined from the fact that the Bachelor of Medicine was conferred after a single term's attendance at the medical school. Indeed, the standards were much higher than they were a century later. No one was permitted to matriculate in the medical schools unless he had shown a definite degree of proficiency in the natural sciences and in Latin. This requirement was, I think, at least as high as a single year of college work. Besides, the matriculant must have spent an apprenticeship of three years with a physician. This apprenticeship was no sinecure, but was taken quite seriously at that time, and involved a good deal of practical work in the handling of drugs and assisting the physician, as well as considerable reading of medical works under the tutelage of a physician who in the long rides to patients at the time usually had abundant opportunities to ascertain whether the reading had been done intelligently. Far from the standards being low, they were very satisfactory even for this preliminary degree.

For the Doctor's Degree in Medicine, two more years of practical and theoretic studies in anatomy, materia medica and chemistry and the theory and practice of medicine, with attendance at clinical lectures, was required. Unfortunately many of the medical students in the early times were satisfied with the Bachelor's Degree, especially as the public made no distinction and called all those with the right to practise, "Doctor." The intentions of the medical faculties, however, were of the best, and only much later did pecuniary considerations invade the medical schools to the very serious detriment of teaching and the lowering of standards.

Dr. David Hosack in his inaugural discourse at the opening of Rutgers Medical College in New York City gave the details of the organization of the Medical School and of its first graduates. He said :

In 1768 a medical school was organized under the direction and government of the college of the province of New York, then called King's College, and a board of professors appointed to teach the several branches of medical science. The instructors in this early school were Samuel Clossey, M.D., Professor of Anatomy; John Jones, Professor of Surgery; Peter Middleton, M.D., Professor of Physiology and Pathology; James Smith, M. D., Professor of Chemistry and Materia Medica; John V. B. Tennant, M.D., Professor of Midwifery; and Samuel Bard, M. D., Professor of the Theory and Practice of Physic. On all these branches lectures were regularly given, and the degrees of Doctor and Bachelor of Medicine were conferred by the College. The Reverend Dr. Miller, in his valuable "Retrospect of the Eighteenth Century" remarks, that no degrees in medicine were conferred by this college, previous to the revolutionary war; but in this instance, an error is committed by that eminent and usually accurate writer; for in 1769 the degree of Bachelor in Medicine was conferred upon Samuel Kissam and Robert Tucker. In 1770 the degree of Doctor of Medicine was conferred upon the last mentioned physician, and in May of the succeeding year the same degree was conferred upon the former.

Probably the largest place in the history of medicine in New York in the eighteenth century is occupied by the Doctors Bard, father and son, John and Samuel. John Bard practised in Philadelphia until the forties of the eighteenth century, when on the advice of Benjamin Franklin, he removed to New York, and became an extremely popular physician with a high sense of professional duty not only toward his patients but toward the com-

munity at large. He was the city's early efficient quarantine physician, he was constantly occupied with plans for the improvement of public health, and the fact that just after the Revolution he was the first president of the Medical Society of New York shows the high estimation in which he was held by his professional brethren.

Something of the estimation in which Dr. John Bard came to be held in New York toward the end of the eighteenth century can be appreciated very well from the account of him by Thacher. Dr. Bard had come from Philadelphia highly recommended by Benjamin Franklin; indeed, as has been said, it was at Franklin's solicitation that he moved to New York, and his reputation soon secured him a great many patients among the best people in the city and he knew well how to retain them. Thacher says: "By the urbanity of his manners, his professional talents, and the charm of his conversation, which was enlivened by an uncommon flow of cheerfulness, enriched by sound sense and adorned by a large fund of anecdote, he so effectually recommended himself to the notice and friendship of the most respectable families, that he was almost immediately introduced into a valuable scene of business and very soon arrived at the first rank of professional eminence, which he retained through a long life of more than fourscore years."

Dr. John Bard's son Samuel was, however, much more distinguished than his father, and was, as has been said by Mumford, the most eminent American physician of his time with the single exception of Benjamin Rush. Samuel Bard was born in Philadelphia shortly before his father emigrated to New York to take up practice here. He was educated at King's College, now Columbia, where he graduated at the age of nineteen. Immediately after graduation he went to London and Edinburgh, receiving his medical degree from the latter University in 1765. When he came back to America his first thought was of the necessity for medical teaching in this country. He found others of like mind. Peter Middleton had already attempted nearly a score of years before some pioneer teaching of anatomy. Samuel Clossy had taken up the same task later. With these as the teachers respectively of physiology and pathology and anatomy, Bard succeeded in associating John Jones for surgery, James Smith for chemistry and materia medica, John B. V. Tennant for midwifery, while he himself took the chair of the theory and practice of physics.

YASSEL BNA



SAMUEL BARD

Bard was much the youngest of them all, only twenty-six years of age, when he thus came into the chair of practice. The Medical School thrived until the Revolution, and then Dr. Bard, whose sympathies were strongly loyalist, retired for a time to Shrewsbury, New Jersey. When New York was captured by the British he returned, and soon gained a lucrative practice. He seems after the Revolution to have settled down to accept wholeheartedly the state of affairs that had developed in consequence of the Revolution, for when General Washington was elected President and his first executive residence was in New York City, Dr. Bard was chosen as his physician. This added greatly to his practice among those best able to pay for the services of a physician, and so Bard was able to make a great deal of money. He devoted his time, however, to many public services besides his practice, the organization of New York Hospital, the establishment of the City Library in which he was largely instrumental as well as the organization of the New York Dispensary. When only fifty-six years of age he retired from active practice, leaving Dr. Hosack, whom he had taken into partnership only three years before, his extensive practice. He lived for nearly twenty-five years, occupying himself with medical education, the improvement of midwifery, and with intellectual interests of many kinds. Towards the end of his life he published "A Guide for Young Shepherds," which has been declared the best practical treatise upon sheepbreeding up to that time. In the literature of medicine he is best known for his article on diphtheria, "An Inquiry into the Nature, Cause and Cure of the Angina Suffocative or Sore-throat Distemper," which was published in New York, 1771. Two years before his death he published a discourse on medical education (New York, 1819) which is often quoted by those interested in the development of medical education in this country. He was best known in his own time for his work, "A Compendium of the Theory and Practice of Midwifery" (New York, 1807), which was intended mainly for the use of midwives and young physicians. He had been deeply interested in obstetrics as a physician, and during his long life had seen the many abuses and the high mortality due to the ignorance of untrained midwives. He felt that it was quite impossible to do away with the midwife as an institution, so he took up the plan of providing simple brief instruction as to her duties.

The other of the most important founders of this school, Dr. Peter Middleton, well deserves a place in the "History of Medicine

in New York." We are not very well informed with regard to the details of his life. He was born in Scotland, came to New York in 1745, and after thirty-six years of successful teaching and practice of medicine in New York, died highly regarded, in 1781. He was a graduate of the University of Edinburgh, and very soon became interested in providing medical education for New Yorkers. In 1750 he and Dr. John Bard made a series of dissections, the first of their kind for the purpose of anatomical instruction in this country. When the question of establishing the first medical school came up he was an important factor in it, and was the Professor of Pathology and Physiology from 1767, and of Chemistry and Materia Medica from 1770 until the Revolutionary War put an end to systematic medical teaching. His "Historical Inquiries into the Ancient and Present Systems of Medicine" is often referred to, but its place in history as a pioneer work in our medical literature has given it much more of its reputation than its contents. There is a letter of his on croup which was published long after his death in the "Medical Repository" (Volume IX). This is referred to in the chapters on "Epidemics" and "The Surgical Specialties."¹

During the Revolution, instruction in medicine was not given up entirely, though the regular school courses of instruction were evidently disturbed. The *New York Gazette* for April 28th, 1777, has an announcement that is interesting in this regard: "On Monday May 5th, will be revived a Course of Pharmaceutical Prelections; wherein all the exotic simples will be described, their places of nativity and medicinal power, with the forms of composition, and a general account of the Diseases in which they are usually exhibited. By Samuel Clossey, M.D."

Dr. Clossey evidently devoted himself to other departments of medicine as well as pharmaceutics, for the *New York Gazette* for October 2, 1777, announces "Anatomical Prelections. Dr. Clossy (the difference in spelling does not indicate any difference

¹At the commencement of the Revolutionary War we had one medical book by an American author, three reprints, and about twenty pamphlets. (Billings' "Century of American Medicine," Philadelphia, 1876.) It is sometimes said that there was no American medical literature, but of course there was abundant medical literature in Mexico and South America, and it was only that we at the North were so dependent on Europe that ours had not as yet developed. The single medical book was John Jones' "Plain Concise Practical Remarks on the Treatment of Wounds and Fractures" (New York, 1875).

in the individual) presents his best respects to the gentlemen of the general hospital and begs leave to inform them that his anatomical prelections will begin on Monday, November 3rd, at one o'clock as usual." That even as the Revolution proceeded medical studies were pursued though apparently there was no regular medical instruction leading to a degree in medicine we have a number of further evidences. The advertisement in the *Royal Gazette* for July 5th, 1780, runs as follows: "Mr. Bayley presents his compliments to the gentlemen who did him the honor of attending the operation in surgery last Winter and will be happy to see them at his house on Friday the 7th at five o'clock p.m."

From the very beginning of the medical school, an attempt seems to have been made by Dr. Clossey to make a collection of anatomical materials for teaching purposes. Dr. Richard Bayley continued the effort to create an anatomical museum, but his labors were rendered vain by the disturbance known in history as "The Doctors' Riot," which took place in New York City in 1788. As has been told in detail in the chapter on "The Doctors' Riot and the Quest of Anatomical Material," a medical student imprudently shook an arm out of the window of the dissecting room at some passers-by. The crowd that soon gathered took offence at this action. As a result a mob broke into the building of the New York Hospital, where they found Bayley's anatomical collection, with whatever had been gathered also by Dr. Clossey, and it was all bundled out into the streets and served to make a bonfire.

Very little was left of the work of years, but Dr. Wright Post took up once more the task of making an anatomical museum and not only added specimens prepared by himself but also a number which he imported from Europe. Other men whose names are well known in the history of New York medicine added greatly to this collection,—Valentine Mott, Henry W. Onderdonk, John van Buren, and Guy Carleton Bailey and others.

Dr. Richard Bayley (1745-1801) is an interesting character around whom centers a number of important details in the history of medicine in New York during and after the Revolution. He was born at Fairfield, Connecticut, and studied under Dr. Charlton, of New York, whom we know as a very successful practitioner of medicine in the city. Dr. Bayley married Charlton's daughter, and then went to London for special studies, returning to New York to be one of the leaders in medical science, as well as gaining

a very successful medical practice. Dr. Charlton and Dr. Bayley, father-in-law and son-in-law, are rivals with Dr. McKnight among the historians of the time for the distinction of having been the first physicians who rode to visit their patients. This would mean, of course, to use a carriage, for the physician on horseback had been a familiar institution all during the Colonial history.

In London, Bayley came to be a favorite student of William Hunter and worked in his dissecting room. He was a loyalist in opinion, and so obtained a commission as surgeon in one of the regiments of the King's forces sent to this country to suppress the rebellious colonists. He was stationed in Rhode Island, and, his wife falling ill, he had to resign his commission in order to get to her deathbed. He seems to have been in rather intimate association with the British during their occupation of New York, and was recognized as an authority on questions of American medicine. His ideas with regard to the croup then prevalent were published in Richter's "Surgical Depository" in letters sent that journal by Michaelis, chief of the Hessian medical staff. Just before the close of the Revolution, Bayley published his letters to William Hunter on *Angina Trachealis*. He was much more interested in normal and pathological anatomy than in the study of disease clinically, and seems to have distrusted the therapeutics of the time so much as to have made a rather unsatisfactory medical attendant. He was even criticized for his care of sick British soldiers because it was said that he was more interested in the scientific investigation of their cases than in the treatment of their diseases. Just after the Revolution he began to give public anatomy lessons with dissections in the New York Hospital building, which had not yet been occupied as a hospital. It was here the "Doctors' Mob" occurred, ruining his collection of specimens. He was chosen as Professor of Anatomy in Columbia College Medical School when it was organized, and held this position until his death in 1801. His "History of Yellow Fever in New York in 1795" is one of the classical contributions to that subject. After this he took a great deal of interest in the question of prevention of disease, and he emphatically insisted that the epidemic diseases which came to our port were "murderers of our own creating." With other physicians of the time he succeeded in securing the establishment of the New York Dispensary, devoting a great deal of time to the

care of the ailing poor. No risk was too much for him to take in his professional capacity, and in 1801, while devoting himself unstintedly to the care of the feverstricken on board an Irish immigrant ship, he himself contracted the disease and died from it.

A good idea of the costume worn by physicians making their rounds at this time can be obtained from the following description of the dress of Dr. Charles Frederick Wiesenthal, one of the best known medical teachers of his day, whose medical career was spent in Baltimore. Baltimore physicians, we may remark, were little if any more stylish in this regard than New Yorkers. Dr. Wiesenthal wore "a scarlet cloak, three-cornered hat, blue velvet coat with gold buttons & buff facings, buff vest, lace ruffled shirt, knee breeches, stockings (white or black, sometimes colored), silver shoe buckles, plain white cravat surrounding the neck, wig & cue tied with a black ribbon." No wonder that Dr. Jones, used to the free and easy life of camps, resented having to put on all this finery, and a wig besides. It has been said that every man was expected to spend half an hour in the hands of his barber every day at this time, attention being mainly concentrated on his wig. We have changed the end of our attentions to the body in our time, and I believe that the Austrian surgeon Lorenz, when asked what was the most surprising thing he had seen in America, declared to the surprise of the questioner, "The fact that I have to be present for a quarter of an hour every morning when my shoes are polished."

The first doctor in New York to keep a gig or carriage, if that distinction is worth while chronicling, it shows at least that he was either a successful practitioner or a good advertiser, was Dr. John Charlton, an English surgeon who had been rather prominent at the court of King George III before he came to New York with the British army. He married Mary De Peyster, the daughter of Abraham and Margaret Van Cortland De Peyster, and thus became related by marriage to most of the principal families of New York at that time. He is said to have limited his practice almost entirely to his family connections. This would not be difficult in those days of large families and rather close intermarriage as the result of the segregation of this country from Europe to a great extent and the difficulties of travel. More probably is known about Dr. Charlton's personality than about many a physician who made more serious contributions to medicine. He was the society physician of the

time, recognized everywhere that he went, a short stout man of florid complexion whom nearly everybody in the city knew by sight, fond of horseback riding and traditionally quite ready to parade himself and horse for the benefit of inquisitive folk.



CHAPTER V

THE FIRST MEDICAL SOCIETY

THE spirit of professional fellowship brought the physicians of New York into a formal Medical Society some time in the first half of the eighteenth century. Just when this society was organized we do not know, but there is at the New York Academy of Medicine a manuscript notebook belonging to Dr. John Bard, of New York, bearing the date 1749, the first paper in which has the title, "An Essay on the Nature of Ye Malignant Pleurisy that Proved so Remarkably Fatal to the Inhabitants of Huntington, L. I., and some other places on Long Island, in the winter of the year 1749, drawn up at the request of a Weekly Society of Gentlemen in New York, and addressed to one of them at their meetings." This Medical Society seems to have held regular meetings, or at least to have continued its existence more or less continuously down to the last decade of the century, when it was merged in another society called the New York State Medical Society, of which we have much more definite records.

Twenty years after Dr. Bard's paper was read before it, Dr. Peter Middleton in his introductory lecture at the opening of the Medical School of King's College, November, 1769, dwells on the fact that one of the most important factors for the progress of medicine and above all of professional advance, is the institution of societies in which the members of the profession are brought together. He speaks of them as "well regulated associations of gentlemen for promoting the honor of the profession," and pays to the New York Society the honor of attributing to its initiative the foundation of the medical school at whose opening they were assisting. "And permit me to add, as one of the many instances of the utility of these societies, that whatever merit there is in the present institution, it was first planned and concluded upon in a medical society now subsisting in this place, and may it long subsist." Dr. Bard's paper, which constitutes the only evidence for the existence of this society that we possess, has at least the merit of making it very clear that a proper feeling of scepticism with regard to their

own knowledge animated at least some of the members who found expression in its proceedings. It is when men doubt of their knowledge that the impetus to seek further comes to them. In this regard Dr. Bard shows that the scientific character of the proceedings of this medical society of old New York City was well up to the standard that might be expected in a wide-awake community. The closing sentences of his paper are, indeed, not unlike those which might be found, if not in quite the same words, certainly expressing the same ideas, even in our own times. The touch with regard to the possibility of drugs and other remedial measures proving rather harmful than helpful, in spite of confidence and much observation, is indeed quite modern. Dr. Bard seems to have realized quite well the limitation of the art that he was practising, and must have counted on having many sympathetic auditors who also appreciated the many possibilities of error, in the medical empiricism of the day.

Dr. Bard said:

From this account, Gentlemen, of acute Diseases, what sagacity and caution appear to be necessary in the Physical Management of them? Where a mistake as to the real nature of a disorder, the true intention of the cure, or application of Remedies, must infallibly pervert the order and economy of Nature, in digesting and expelling the Disease, and very much endanger the Patient. It was this happy Sagacity, joined with a Natural Physical Genius, which (more than his learning) gave Dr. Radclif his Fame, and made his Practice so remarkably successful.

It was from these Reflections, Dr. Sydenham used to say, He thought it as much incumbent upon a Physician to Read Nature as Books. And Sir William Temple, convinced of these truths, queried whether the General Practice of Physick, as it was in all hands, had done more good or harm to mankind. From the whole, Gentlemen, I think it Necessarily follows, That tho' the Arts of Physick and Surgery under a Judicious Direction, must derive great Advantages to Society, Yet these Arts, in the hands of the rash or unskillful, too often occasion the most fatal mischief, as errors of this kind are errors of the most dangerous consequence.

Twenty-five years after Dr. Peter Middleton's mention of the medical society as still existing in New York, and proving the inspiration for the Medical School of King's College, there seems to have come a reawakening of interest in medical organization among the members of the profession in New York City. As a consequence, a special meeting was called and a society organized which received the ambitious name of the "Medical Society of the State

of New York," though there is no record of any member of the medical profession from outside New York City ever having belonged to it. Fortunately the records of this society have been preserved, and the original minute book was presented to the Academy of Medicine by Dr. Samuel Francis, of Newport, the son of the late Dr. John R. Francis, of New York, to whose interest in medical historical matters is doubtless due the preservation of this precious record of old-time medical society meetings in New York City.

The title of this book is "Minutes of the Medical Society of the State of New York, from November 14, 1794, to July 8, 1806." In the minutes of the first meeting it is recorded that "A Number of medical gentlemen, wishing to associate for the purpose of promoting friendly professional intercourse, determined to meet at the City Hall on the evening of November 14, 1794, where there appeared Drs. John Charlton, Thos. Jones, Samuel Bard, Malachi Treat, Richard Bayley, Louis Faugeres, James Tillary, Samuel Nicoll, Ab. Bainbridge, David Brooks, Wm. P. Smith, John Gamage, Wm. Hammersley, John Onderdonk, George Anthon, J. R. B. Rodgers, Wm. Post, Wm. Lawrence. Dr. Charlton was appointed chairman."

The minutes of the first meeting then proceed:

After some conversation on the subject of the meeting, it was unanimously resolved, that the present associates will on the dissolution of the Society, known by the name of the Medical Society, form themselves into a Society by the name and style of the Medical Society of the State of New York, and that they will use the seal of the same.

From this it seems evident that the medical society mentioned by Dr. Bard, and twenty years later by Dr. Middleton, still continued to exist, though perhaps there had been some lapse of interest in its meetings. Certain it is that it was still considered as so pre-empting the ground which the new medical society was to take, that the new organizers considered that they would only properly have an existence after the dissolution of the previous medical society. While there is some doubt about it, from the way the last sentence reads, it has even been suggested as possible that they had resolved to use the seal of the old society.

It is evident, even from the rather scanty account of the proceedings of this society which we possess, that it took a prominent place

in the medical life of New York City at this time, and that it was appealed to with confidence on matters of public health. It is interesting, too, to find that at this early date the medical society took on itself to point out the ravages that epidemic diseases made in the city, and to suggest what means would be best suited to suppress these epidemics and minimize their dangers as far as possible. The Society had not been in existence for a year before the Governor of New York State appealed to it with regard to the epidemic prevailing in the upper part of the city, as a consequence of which commercial relations between New York and Philadelphia had been stopped for a while. The following minute shows how the matter came up:

At a meeting of the Medical Society of the State of New York, held at the usual place, Sept. 4, 1795,

The President read a letter from the Governor of the State to him, as President of this Society, on the subject of the present alarm in consequence of the disease in the upper part of the City for the Intercourse having been stopped between this City and Philadelphia by the Governor of Pennsylvania's proclamation. After some conversation, Dr. Bayley, Dr. Tillary, Dr. Smith, Dr. Mitchell and Dr. Bard were appointed a Committee to answer it. Adjourned to meet at this place to-morrow at 12 o'clock at noon.

There is no account of the report of this committee, but the following year there is a report of an effort made by this same committee to arouse the mayor, aldermen and commonalty of the City of New York, to a sense of the danger of such epidemics and the methods by which they might be prevented. This report is all the more interesting because it established the fact that, 110 years ago, the medical societies of the City of New York had begun that series of complaints to the municipality with regard to the lack of cleanliness in the streets, which they have continued to make with almost unceasing regularity ever since.

The report is as follows:

At a meeting of the Medical Society of the State of New York, Feb. 29, 1796.

On motion, resolved that a Committee be appointed to point out to the corporation of this City the ravages which the late epidemic made amongst that class of emigrants which arrived in the City during the late spring and summer seasons, and to recommend that a suitable provision be made to prevent a similar calamity in future. The Committee appointed Drs. Bayley, Tillary and Post.

Resolved, that the above Committee do deliver to the President of this Society their statement, in order that it may be by him signed and presented to the Corporation.

Resolved, that the Secretary cause the late communications sent to the Corporation transcribed in their book of Minutes.

JOHN ONDERDONK, Secretary.

The Mayor, Aldermen and Commonalty of the City of New York, Gentlemen:

The Medical Society of the State of New York, having taken into their most serious consideration the dreadful effects of the late afflicting calamity with which this Metropolis has been visited, beg leave to suggest the following observations to your honourable board, as the result of their deliberations. It would be improper or at least foreign to the design of this address to enter into an enquiry whether the late epidemic was imported or was generated amongst us, their motive for addressing you at this time is a desire to engage and at the same time to assist as far as they are able, your respectable board in applying a corrective to some of the causes, which they conceive contributed to extend its influence and increase its malignity.

On this head they venture to point out the following objects, as particularly demanding the notice of the magistrates and the interposition of their authority.

1. The accumulation of filth in the streets, this being composed chiefly of dead animal and vegetable substances, is when exposed to a hot sun, a source of noxious effluvia, which have a tendency to produce the most fatal effects. That such effluvia have been the cause of fever has been confirmed by repeated observation and experience in all parts of the world. They remark further that the pernicious practice of collecting in heaps on vacant lots the above mentioned offensive matter, for the purpose of manure, as very reprehensible, and they have no doubt it has produced many instances of disease. This was the case (during the prevalence of the fever) at the head of George Street, in which neighborhood it raged with peculiar violence.

2. Obstructed water drains, by occasioning stagnant water, and collecting matter of various kinds which, undergoing decomposition, emit air of qualities extremely prejudicial to health.

3. The situation of lots in certain parts of this city where these and the houses on them are considerably below the ordinary level of the streets, in such places, the necessary consequences must be an accumulation of various substances which, under the influence of heat and moisture, putrify, and thus contaminate the atmosphere, and communicate to it properties of a nature extremely deleterious.

4. The situation of many of the docks and shores along the East River, it is observed that in many places large surfaces of mud are exposed to low water, which emit (during the heat of summer) an intolerable stench, and this evil is greatly increased by the practice of filling in docks with every species of filth collected from the streets, which prove an unfailing

source of unwholesome air. Add to this the mode of erecting stores on piles, leaving a space under them, filled with stagnant water, which is also a receptacle for every species of filth. When they recollect that the malignant effects of the late epidemic were principally confined to those who resided on or in the vicinity of the new made grounds on the south side of the city, they cannot but express their appreciation.

5. That the extension of such grounds, further into the river, for the purpose of building thereon, may be productive of the most serious effect on the health of the inhabitants.

To the causes above enumerated, others might with propriety be added, which endanger the health of the Citizens, such as slaughter houses, manufactories of soap and candles, sillum, leather, starch, &c. In laying this detail before you, they cannot conclude without declaring that, in their opinion, the malignity and fatality of the late fever was greatly influenced by the aforementioned causes, and were it necessary, they could adduce the authority of the most eminent Physicians and Philosophers in corroboration of this opinion, and therefore with confidence they respectfully submit it to your serious consideration and hope that its importance to the health and reputation of the City will receive, as it undoubtedly claims, your early and due attention.

We might consider that perhaps the medical society of over a hundred years ago would have very little cause for complaint as to the substitution of drugs or the use of its name by some enterprising druggist for advertising purposes without due warrant. One of the minutes, however, shows that this was one of the difficulties the Society had to encounter before the end of the second year of its existence, and it is encouraging to find that the members met the issue squarely and stated that if the unwarranted practice of claiming to have their authorization were continued, they should use all possible legal measures to prevent the abuse.

At a meeting of the Medical Society of the State of New York, held at the usual place, Nov. 10, 1796.

It having been represented to this Society that Messrs. Lawrence & Schefflin (whose store was formerly inspected by this Society) still continued to style it *Inspected* Store, the Agreement between this Body and Mr. Lawrence on that subject having long since ceased, wherefore,

Resolved that the Secretary be directed to state to Messrs. Lawrence & Schefflin the impropriety of advertising their Drugs as inspected by this Society, being an injury to us, to dealers in drugs and Medicines, and to the Community, and to inform them that if it be continued, the Society will be obliged to protect themselves for any blame which may be thrown on them.

At the beginning of 1796 it is evident that there was considerable

disquietude felt as to the possibility of an epidemic during the year. New York had recently had some sad experiences in this matter; and, as a consequence, the old committee on infectious diseases was reappointed as an advisory board to prepare a report for the city authorities.

At a meeting of the Medical Society of the State of New York, January 12, 1796,—On Motion, resolved that a Committee of three be appointed to report what precautions shall be recommended, by this Society, to the City Corporation, to be taken in order to prevent the generation among ourselves, or the spread (if imported) of any malignant or infectious disease in future. Doctors Bayley, Post and Tillary were appointed.

In the springtime of 1796 a second acknowledgment of the representative status of the medical society is to be found in communication from the Governor of the State, Mr. John Jay, asking for an opinion with regard to the building of hospitals for contagious diseases. As usual, a committee was appointed for this purpose, an extra meeting having been called in order to receive the Governor's communication and take action upon it, without delay.

Extra meeting of the Medical Society of the State of New York, 26th of April, 1796. A letter from Gov. Jay was read, requesting the opinion of the members of the Medical Society of the State of New York on a plan of a Lazaretto and observations thereon, by Dr. Saml. Bard. The Society went into the consideration of the plans and after some debate it was Resolved, That a committee of three be appointed to draw up an answer, to the Governor's communication which shall be under the signature of the President. The following gentlemen were appointed to that committee: the President, Drs. Mitchell and Bard.

In the summer of 1796, a further recognition of the Medical Society came in the shape of a communication from the recently organized committee of health, of New York City, asking for the co-operation of the Society, which was, of course, readily granted. This communication seems to have been presented at the regular quarterly meeting of the Society in July. At the same meeting, the response of the then President of the Society, Dr. John Charlton, was read and evidently approved, though there is no mention of this fact in the minutes. These early records of the relations between the municipal authorities and the Medical Society of the city are considered of sufficient interest to be reproduced here, and are as follows:

At a meeting of the Medical Society of the State of New York, 12th July, 1796.

Present, Dr. Tillary in the Chair.

Drs. Bainbridge, Faugeres, Anthon, Mitchel, Hammersley, Gamage and Onderdonk.

A letter from John Murray, Chairman of the Committee of Health, directed to John Charlton, President of the Medical Society, was read, and the answer from the President of the Medical Society to John Murray. They were ordered to be recorded.

NEW YORK, 5th July, 1796.

Dr. John Charlton:

Sir:

As President of the Medical Society it is proper to inform you that Robt. Bowne, Ind. B. Coles, Wm. I. Robinson, Henry Will, Thos. Childs, John Campbell and myself, have been appointed commissioners of health for this city, and that we have formed ourselves into a board for transacting such business as may respect the duties of our appointment, and in order to be the better enabled to perform our duties, we shall at all times be happy to consult with you on such measures as may tend to the general good and health of our fellow citizens, and I am requested to inform you that such communications as it is necessary for the physicians to make to the commissioners, may be for the present directed to John Murray, No. 27 Beekman Street, who acts as Chairman of the board, and who will at all times be happy to receive communications from the Medical Society.

You will please communicate the contents of this letter to the members of the Medical Society in order that they may know who the commissioners of health are and where to make the communications required.

I remain, very respectfully,

Your humble servant,

JOHN MURRAY,

Chairman of the Commissioners of Health.

Then follows the President's answer:

NEW YORK, July 6, 1796.

Dear Sir:

I have been this day favored with yours of yesterday, The Med. Soct. will meet next Tuesday, when it shall be laid before them.

I will venture to report, Sir, that the Society will, at all times, cheerfully co-operate with the Commissioners of health, in their exertions to preserve the health of our fellow citizens, but I should be happy (previous to their meeting) to receive from you, for their information, some more particulars, intimations of the nature of the communications, the Commissioners would wish from them. My motive for this request is that early in the last winter, the Medical Society were at the pains of pointing out to the Corporation of the City the precautions which to them

appeared indispensably necessary to the prevention in the future of a Calamity similar to that we experienced last summer and autumn, not an article of which (I believe) has been attended to. If the Commissioners have, however, and wish to remove nuisances, which are the productive causes of our misfortunes, I have no doubt the Med. Soct. will afford all the aid in their power to effect so salutary a measure, or if the Commissioners wish to direct the attention of the Society to any other object, I am confident that it need only be signified to them to ensure their utmost exertions.

I am, Sir,

Most respectfully your very humble servt.,

JOHN CHARLTON,
Pres. of Medical Soct.,
State of New York.

MR. WILLIAM MURRAY,
Chairman of the Commissioners of Health, N. York.

A curious feature of the proceedings of all the medical societies of this time, which we find frequently exemplified in the early transactions of the Medical Society of the State of New York later on, is the evident interest of the members in all the natural sciences, and the manifest feeling that a physician must know something about geology and mineralogy, as well as botany and zoölogy, and the other sciences more closely allied to medicine. One does not often find this interest extending also to astronomy, but there is a minute in the proceedings of the meeting of the Society for November 5, 1796, which shows that this also was considered to be within the sphere of physician's interest.

A letter from Doctor Joseph Young, directed to the President of the Medical Society, enclosing his proposals for printing a new physical system of Astronomy. On motion, it was resolved to subscribe for two copies for the Medl. Society.

Efforts were evidently making from time to time to secure the passage of a law regulating the practice of medicine in New York State. Those who know how difficult it is to procure medical legislation can readily appreciate that there were a number of disappointments before the enactment of the law. Nearly ten years before the first law for the regulation of the practice of medicine did actually come, an extra meeting of this first medical society of the State of New York was held for the purpose of discussing a law then said to be before the Legislature, and a committee was

interesting to find that, even at this early date and a number of members in the Society, there was still with regard to the payment of fees. Finally there was an open rupture between the Society and one member, and most of the minutes of one regular meeting with the consideration of his declaration that he would pay no fines, annual subscriptions nor initiation fee.

The Treasurer reported that a Committee had effected a reconciliation with all the members except Drs. Mitchel and Gamage, who refused to do so. The Treasurer further reported that Dr. Mitchel on positive terms that he would not pay any monies to the Society either for fines, annual subscriptions or initiation fee, and was indebted to this Society as appears by the books of

of which the Society entered into the following resolution:

Mitchel having for several years attended as a member in regular application being made to him), refused to

be considered, that he be no longer considered as a member of

the meetings contain reports of the scientific progress. It is probable that this was mainly due to the fact that the members could not find the time to make such a report, and that it was neglected. Occasionally, however, when a more important moment than usual in scientific matters came up, a note with regard to it is to be found. These notes are interesting from their rarity. One of these notes, dated April, 1799, shows that another cure for tetanus was communicated to the Society and as the successful remedies of the modern time are able to conclude that in subsequent experience the members of the medical Society have found no more effective in cases of tetanus, than any other of the many recommendations made before for this disease, from time immemorial.

Hosack communicated two cases of Tetanus cured, and, under some observations of the causes and cure of Tetanus, by Hiley, Rodgers, Hammersley and Hosack.

In the century the Society put itself on record in commendation of young medical men to act

appointed to consider it, and draft a memorial with regard to it. The minutes of this extra meeting are interesting, because they also contain the first reference to the proposed union of the Library of the Medical Society with that of the New York Hospital. There evidently had been difficulty in properly housing and caring for the books, and it was thought this could be obviated by uniting their Library with that already proving so serviceable at the Hospital.

Extra meeting of the Medical Society of the State of New York, February 14, 1797.

Present: The President and Vice-President, Drs. Faugeres, Anthon, Hammersley, Gamage, Bayley and Mitchel.

The Society was informed by the President that this meeting was called in consequence of a law now being before the Legislature to regulate the practice of Physic and Surgery. After some debate, it was Resolved that a committee of three be appointed to draft a memorial to the Legislature on the subject of the practice of Physic, and that the said memorial be signed by the President and countersigned by the Secretary. The committee appointed was Drs. Bard, Bayley and Mitchel.

On motion of Dr. Jones, seconded by Dr. Hosack, Resolved, that at our next regular meeting, the Society do take into consideration the propriety of uniting their Library with that of the Hospital.

Two months after this extra meeting, at a regular meeting of the Society, the question of the union of the libraries was further considered, and eventually a union was arranged for. Nearly a century later the Library of the New York Hospital was given to the New York Academy of Medicine, so that the original contribution of volumes from the profession which for many years was practically so placed as not to be of general use, found their way to a library where the New York physicians could use them very readily.

At a meeting of the Medical Society of the State of New York, 11th, April, 1797.

Present, the President and Vice-President; Drs. Anthon, Tillary, Rodgers, Faugeres, Gamage, Bainbridge and Hammersley.

On motion of Dr. Rodgers, seconded by Dr. Anthon, Resolved, that a committee of three be appointed to confer with the Governors of New York Hospital on the subject of uniting the Library of this Society with that of the Hospital, and report at our next meeting. The following members were appointed to that committee, Vice-President, Drs. Tillary and Hammersley.

It is rather interesting to find that, even at this early date and with the limited number of members in the Society, there was still some difficulty with regard to the payment of fees. Finally there seems to have been an open rupture between the Society and one prominent member, and most of the minutes of one regular meeting are taken up with the consideration of his declaration that he would pay neither fines, annual subscriptions nor initiation fee.

April 9, 1799.—The Treasurer reported that a Committee had effected a settlement with all the members except Drs. Mitchel and Gamage, who are still delinquent. The Treasurer further reported that Dr. Mitchel had declared in positive terms that he would not pay any monies to the Medical Society either for fines, annual subscriptions or initiation fee, for which he stands indebted to this Society as appears by the books of the Treasurer:

In consequence of which the Society entered into the following resolution.

Dr. Samuel L. Mitchel having for several years attended as a member of this Society (on regular application being made to him), refused to pay his dues.

Therefore, Resolved, that he be no longer considered as a member of this Society.

Not many of the meetings contain reports of the scientific proceedings. It is probable that this was mainly due to the fact that the secretary could not find the time to make such a report, and accordingly it was neglected. Occasionally, however, when a matter of more moment than usual in scientific matters came up for discussion, a note with regard to it is to be found. These notes are all the more interesting from their rarity. One of these notes at the meeting in April, 1799, shows that another cure for tetanus had been communicated to the Society and as the successful remedy is given, we of the modern time are able to conclude that in the course of subsequent experience the members of the medical society found the new prescription no more effective in cases of acute tetanus, at least, than any other of the many recommendations that have been made before for this disease, from time immemorial down to our own day.

Apl. 9, 1799. Dr. Hosack communicated two cases of Tetanus cured by the free use of wine, under some observations of the causes and cure of Tetanus by Drs. Bayley, Rodgers, Hammersley and Hosack.

Just at the end of the century the Society put itself on record with regard to the recommendation of young medical men to act

as assistant surgeons in the army and navy. There was evidently a high spirit of professional dignity in the matter, and it was considered that no one would be recommended for this purpose unless his qualifications were such as to deserve such recommendation, and unless the Society had good reason to know definitely the existence of such qualifications. The minute in this matter is interesting, because it states the attitude of the Society so clearly.

At a meeting of the Medical Society of the State of New York, 14th of January, 1800.

The members of this Society having been frequently applied to for the purpose of recommending young men as proper persons to assist as surgeons in the Navy and Army of the United States; it was Resolved, that the members of this Society will not recommend any person as qualified to act in the aforesaid capacity, unless he shall have received a medical diploma from some college or university, or produce a certificate of his having been regularly examined by three of the members of this Society.

And further, Resolved, that the members of this Society will not recommend any person as a practitioner of Physic unless he shall possess the testimonials expressed in the preceding resolution.

The midsummer meeting of 1800 is noteworthy as containing the first proposal for honorary membership. The man proposed, Dr. Letsom, was one of the most distinguished of living English medical men at the time, and there seems no doubt that the Society considered it was honoring itself rather than him in proposing him for membership. The same minute contains a note with regard to the library, which shows the interest taken in this subject.

At a meeting of the Medical Society of the State of New York, held in the City Hall, New York, 8th day of July, 1800, at 8 o'clock P. M.

The censors reported that they had appointed Dr. N. Romaine to purchase books in London to the amount of Fifty dollars for the Medical Society.

Dr. Hosack proposed Dr. Letsom, of London, as an honorary member of this Society.

At the beginning of the new century the Society determined to procure a new meeting place. The report of the committee appointed for this purpose is quaintly interesting in these modern times, because of the details it contains. A room, with fire and candle light in a hotel on Broad Way for two dollars each meeting represents a state of affairs that is eminently desirable, perhaps,

from the standpoint of the financial committee, but quite impossible except under the primitive circumstances of the time. At the same meeting the question of the engrossing of the certificate of honorary membership upon vellum, and handsomely, was discussed; and it was decided that the Society should have the right of inspecting it before it was sent to the new honorary member.

At a meeting of the Medical Society of the State of New York, held at South Hotel, in Broad Way, 14th day of April, 1801.

The committee appointed to procure a room for the accommodation of this Society reported that Mr. Lovet would furnish a room at his hotel in Broad Way, together with fire and candle light, for the sum of Two dollars each meeting.

Resolved, that this Society accept Mr. Lovet's proposal, and that the future meetings be held at his house.

The committee appointed to revise the By Laws reported progress and requested leave to set again.

The Secretary was requested to have the certificate for Dr. Letsom handsomely written upon Vellum and present it at the next quarterly meeting for inspection.

Just about the beginning of the century, the members of the Society established a code of charges for professional services. Knowing something about the purchasing power of money at the time, one might expect that these charges would be ridiculously low, according to our modern standard. This proves, however, to be by no means the case. The physicians of the time had very properly a high appreciation of the value of their professional services. A hall for a meeting in a Broad Way hotel, with fire and candles, might cost only two dollars a month, but the prices asked for visits were nearly as high as the average of the modern time. It is to be presumed that these were considered the highest charges that would ordinarily be made, and that while many physicians might accept less, no one would be expected to ask more. It is interesting to find that the list begins with the two items "Verbal Advice," and "A Letter of Advice," for which, respectively, five dollars and ten dollars are charged, showing that the physicians of that period did not consider that the principal item of value in their services was the writing of a prescription, but rather the giving of advice.

In those days, of course, most of the physicians carried their own drugs with them, and it might be expected that most of the

drugs were thrown in for the charge for the visit. This was far from being the case, however. In fact, a reading of the list of charges for drugs will serve to show that they were quite as high as are the modern druggists' charges, if indeed not much higher. Twelve cents for each powder given, and twelve cents for each pill or dose of pills, one might say was quite as much as the tariff would stand. A single dose of medicine dispensed without a visit at sixty-two cents, is considerably dearer than the opportunity to renew a prescription at the drug store afforded by modern custom.

Consultations were not appreciated at as high a value in the olden times. The first visit in consultation, five dollars, and subsequent visits, two dollars, cannot but seem very small. It is rather interesting to find that mileage was charged at a dollar a mile, a price which obtains at the present moment, we believe, in many towns much larger than New York at that time. A visit to Brooklyn was only three dollars. One to Staten Island was ten dollars, and this charge was doubled in the winter time. The scale of charges for infectious fevers, where personal danger was incurred, were higher than ordinary visits, and remind us that these were the days when smallpox and typhus fever raged virulently, and when yellow fever, then considered to be an extremely contagious disease, often ravaged New York. The charges for the venereal diseases are made in lump sums for the whole course of treatment, a practice which early New York physicians doubtless found advisable from the capriciousness of such patients.

With regard to the operations, the list given shows that there was much more operating in New York at the beginning of the nineteenth century than might be expected. It is to be presumed that charges were not set down in the list for operations that were not likely to be performed, or had not actually been performed. Bronchotomy (tracheotomy) is found in the list of operations. The charges in midwifery cases can scarcely but be considered high, considering that money at that time was worth at least three times as much as now, and had, indeed, for ordinary living expenses, at least five times the purchasing power of our present currency.

The following is the rate bill for professional charges agreed upon :

We, the subscribers, practitioners of physic and surgery in the State

of New York, do agree upon the following rate of charges for our professional services from and after the first day of July, 1798, agreeably to which rates we do recommend our bills to be presented every six months or oftener, if circumstances permit.

Verbal advice	\$5.00
A letter of advice	10.00
An ordinary visit	1.00
A visit with a single dose of medicine	1.25

MEDICINE TO BE PRICED AS FOLLOWS:

For powders, each .....	.12
Pills, each dose .....	.12
Boluses, each .....	.25
Electuary, per ounce .....	.50
Mixtures, per ounce .....	.12
Decoctions, \$1.50—2.00 lb., or per ounce .....	.12
Infusions, \$1.50—2.00 lb., or per ounce .....	.12
Lotions, per pound	1.25
Tinctures, per ounce .....	.25
Vol. Spt., per ounce .....	.50
Ointment and cerate, per ounce .....	.25
Blistering plasters, according to their size, from \$1.25 to	2.00
Other plasters, from 50 cents to	2.50
For a single dose of medicine dispensed without a visit .....	.62

CONSULTATIONS

The first visit in consultation	5.00
Each subsequent visit in consultation	2.00
A night visit	5.00
Visit at a distance from town, per mile	1.00
A visit to Brooklyn	3.00
A visit to Pawles Hook	5.00
A visit to Staten Island	10.00

The last two charges to be doubled in winter or in tempestuous weather.

The first visit in epidemic fevers, or in other cases where personal danger is incurred	5.00
Each subsequent visit under these conditions	2.00

CHARGES

For curing a simple or virulent Gonorrhea, from \$10.00 to.....	20.00
For curing confirmed Syphilis, from \$25.00 to.....	100.00
For dressing a blister, from 50 cents to	1.00
For dressing wounds, from \$1.00 to	2.00
For applying cupping glasses	4.00
For bleeding in the arm	1.00
For bleeding in the foot	2.00

For bleeding jugular vein	\$2.00
For opening an artery	5.00
For attending in smallpox, from \$5.00 to.....	10.00
Scarrifications of the eye	5.00
Punctures in the Oedematous Swellings	2.00
Inserting a Spue	2.00
Inserting a Seton	5.00
Introducing a Catheter first time	5.00
Introducing a Catheter each subsequent time	2.00
Extracting a Calculus from the Urethra	10.00
Reducing a simple fracture, from \$10.00 to.....	20.00
Reducing a compound fracture	30.00
Setting dislocations, from \$5.00 to	20.00
For reducing a Polypus ani	5.00
For reducing Hernia	25.00
Opening an abscess, from \$1.00 to	5.00
Amputating the breast	50.00
Amputating the arm or leg	50.00
Amputating the joint	100.00
Amputating the finger	10.00
Amputating the penis	20.00
Extirpating the eye	100.00
Extirpating the tonsil	25.00
Extirpating the testicle	50.00
Extirpating a polypus	25.00
Perforating the rectum, nostril or urethra	10.00
Paracentesis of the abdomen	10.00
Paracentesis of the thorax	50.00
Operation for an aneurism	100.00
Operation for harelip	25.00
Operation for hydrocele	25.00
Operation for hernia	125.00
Operation for fistula in ano	50.00
Operation for fistula in erindo	25.00
Operation for Phymosis	10.00
Operation for Paraphymosis	10.00
Fistula Lachrymalis	25.00
Wry Neck	25.00
Cataract	125.00
For operation of Lithotomy	125.00
For operation of Bronchotomy	25.00
For operation of Trepanning	100.00

MIDWIFERY

For a common case, from \$15.00 to	25.00
For tedious or difficult cases, from \$25.00 to	40.00

The Medical Society did not continue without a rival in New York City. It is interesting to find, however, that not only was their rivalry not bitter, but that there seems to have been rather kindly relations between the two societies. It is rather hard to understand just why the other society was founded, though it is possible from its name, the Physical Society, that its membership was limited to those who practised physic only, in contradistinction to those who practised also surgery. The minute of the Society with regard to this new medical organization shows kindly courtesy, and at the same meeting the president of the Physical Society, Dr. James S. Stringham, was made a candidate for membership in the Medical Society. Dr. Stringham was not only admitted as a member, but he became the secretary of the society a year or two later.

In 1803 interest in the question of a law for the regulation of the practice of medicine became once more acute, and a committee was appointed to report on the matter.

At a meeting of the Medical Society of the State of New York, held at Lovet's Hotel, 12th day of July, 1803.

Resolved, that a committee of five members be appointed to take into consideration the propriety for applying to the Legislature of this State for a law, regulating the practice of Physic and Surgery, or a law of incorporation, and report at the next meeting.

Resolved, that Drs. Anthon, Rodgers, Hammersley and Gamage be the Committee.

Nothing seems to have come of this attempt at securing legislation, and the minutes of subsequent meetings of the Medical Society have very little of interest for several years. Indeed, the minutes are so briefly written as compared to some of those at the beginning of the Society's career, that there is more than suspicion that the secretary was neglecting something of his duty, to the detriment of those, at least, of posterity who are interested in medical historical matters, now that a century has passed. In 1806, however, a special meeting of the Medical Society of the State of New York was called for the purpose of considering the law that had been passed in April, by the Legislature of the State. Another special meeting was called two weeks later to take action with regard to it, and the Society practically accepted its legal obliteration and determined, though with many misgivings evidently, to abide by the law that had been passed. At a subsequent regular

meeting the name of the Society was changed and it evidently passed over into the New York County Medical Society, as it exists at the present time.

At a special meeting of the Medical Society of the State of New York, held by order of the President, June 10, 1806.

Present: The President and Drs. Tillary, Hammersley, Faugeres, Onderdonk, Gamage, Borrowe, Proudft, Servant, Barrow and Stringham.

Dr. William Turk, having been duly admitted a member, signed his name to the Constitution.

The Society, after having considered the late law passed by the Legislature, respecting the regulation of the practice of Physic, adjourned for a further consideration of the same until Saturday, June 28th.

Agreeably to adjournment, the Society met on Saturday evening, June 28th, 1806.

Present: The President, Vice-President and Drs. Hammersley, Bainbridge, Faugeres, Onderdonk, Post, Gamage, Proudft, Servant, Turk, Buchanan and Stringham.

The law passed by the Legislature, April 4th, 1806, entitled, An Act to Incorporate the Medical Society of the State of New York, for the regulation of the practice of Physic and Surgery in this State, being duly considered, it was determined by a majority of the Society, that although many parts of the above Act were highly objectionable, still that, under all circumstances, the profession might be benefited by a meeting of the members of this Society with the other physicians of this City at the time and place appointed by law.

On Tuesday, July 8th, 1806, an ordinary meeting of the Society was held.

Present: President and Vice-President, Drs. Faugeres, Onderdonk, Gamage, Hammersley, Proudft, Servant, Borrowe, Buchanan, Turk and Stringham.

The report of the committee appointed to draw up a code of by-laws, and which had lain over since the last ordinary meeting, was now revived and adopted with amendments. The Society considered that, under existing circumstances, it was necessary that the name of this Institution be changed. Drs. Gamage and Stringham were appointed a committee for this purpose, to report at the next regular meeting. Notice was given by Dr. Hammersley that he should propose at the next meeting an alteration of that article of the Constitution relative to the sum to be paid as the initiating fee. Drs. Manley and Neilson were proposed as members. A communication by Dr. Servant was read and ordered to be filed among the papers of this Society.

CHAPTER VI

THE PROBLEM OF THE REGULATION OF THE PRACTICE OF MEDICINE IN COLONY AND STATE

WITH the rise in population of New York City and State, quackery became one of the crying evils of the time. All sorts of men set up as physicians or healers, and a number of others, without any warrant of knowledge or experience, began to manufacture medicines and advertise them as marvelously curative of all forms of disease. It was not until almost our own time that satisfactory legal regulation of the practice of medicine was secured through the Legislature, and even now each session of the State Legislature requires constant surveillance on the part of the medical profession, or laws permitting practice by all sorts of presumed healers would slip through. Even yet we have not succeeded in forbidding the most impudent of quacks and charlatans to put up medicine of all kinds, and by advertising them amply secure large sales for them, though it is well understood by all who have any right to an opinion in the matter that such medicines do harm rather than good, or at most are indifferent and act only on patients' minds. A review of the abuses and the protests that they have evoked form an interesting chapter, but the details would be too long and only a few important headings can be given.

One of the early references to medicine in the general history of New York is the allusion by Smith in his "History of New York" to the abounding of quackery, the lack of regulation, and the shame of it. He said, writing shortly before the Revolutionary War:

Few physicians amongst us are eminent for their skill. Quacks abound like locusts in Egypt, and too many have recommended themselves to a full and profitable practice and subsistence. This is the less to be wondered at, as the profession is under no kind of regulation. Loud as the call is, to our shame be it remembered we have no law to protect the lives of the King's subjects from the malpractice of pretenders. Any man at his pleasure sets up for physician, apothecary, and chirurgion. No candidates are either examined or licensed, or even sworn to fair practice.

During the year 1753 a series of suggestions were made in the "Independent Reflector" on the necessity for such regulation of the practice of medicine as would prevent "the dismal havock made by quacks and pretenders." The writer evidently had a very high idea of the medical profession and of the learning necessary for it. He declared, "of all professions none is so extensive as physic; there are scarce any of the liberal arts or sciences that are not necessarily to be studied by him who would attain to any considerable pitch of eminency in it." Latin and Greek and most of the living languages of Europe were counted among the acquisitions a physician should have. He should be a philosopher, for where the philosopher ends the physician begins. He declares that these qualifications are sadly lacking in many of those who practise medicine in New York. Though there was no lack of physicians, "I believe there is no city in the world not larger than ours that abounds with so many doctors. We can at least boast the honor of above forty gentlemen of the Faculty," he declares that most of them are quite unworthy. To aid in reform, then, he proposes to publish in the "Independent Reflector" the heads of an act of assembly to protect the people of New York against quacks and mountebanks, extortion and repression.

Accordingly, in the *Independent Reflector* for May 10, 1753, is to be found the Heads of an Act to Regulate the Practice of Physic in New York. "All the Physicians, Surgeons, and Apothecaries in the Province are to be licensed by a board consisting of the four eldest members of his Majesty's Council, the judges of the supreme court, the representatives of this city and assembly, our mayor and recorder for the time being, or any seven of them, with the assistance of two physicians and two surgeons by the majority of them elected. Until after examination and licensing no one shall practise. Examination shall be public." Doctors' bills were to be submitted to an examiner before presentation. No bills were to be collectible unless the practitioner had a license.

The writer recognized the opposition that would be aroused, but insisted on how much good would be accomplished. "It is not to be doubted that such a Law would be disgustful to Knavish and ignorant Quacks; but it is to be hoped, that its being prejudicial to those whose Lives are a continual Prey upon the Public, will be esteemed an insufficient Objection against it."

It is no wonder then that protests against quackery were occa-

sionally made, and it is rather interesting to find that the *Weekly Postboy*, which benefited so largely from advertisements of remedies of all kinds, could in its editorial columns condemn quackery and insist emphatically on how much harm was being done by these scandalous interlopers. Evidently there was the same divergence of interest between the counting room of the advertising department and the editorial rooms in these journals of nearly two centuries ago, as there were in practically all the daily newspapers until a few years ago, and which still exists in many even thoroughly respectable journals. The editor condemned bitterly the imposition upon the people, while the advertising department collected the shekels for the insertion of the announcements of wonderful remedies. An editorial note in the *New York Weekly Postboy* for February 12th, 1750, denounces some foreign quacks who had dared to intrude on the preserves of the native sons. Indeed, it is this fact that they are "scandalous interlopers," that arouses editorial ire:

We are credibly informed, that a Number of *vile Quacks* and *base Pretenders* to a most ancient, useful and honorable Science, have been lately brought over to this City ('tis said from London, but we rather think from Rome;) which if encouraged must tend greatly to the Loss and Prejudice of the *true* and *lawful Proprietors*, as well as to the Damage and Detriment of the Science itself; and as such *bold Intruders* have been heretofore unknown in these Parts a select Number of steady Friends to their Country, being jealous of the Liberties of the natural Subjects, have espoused the righteous Cause, and last Week openly expressed their just Resentments against the wicked Encouragers of those *scandalous Interlopers*; by which Means, we are in Hopes, they will soon be forever banished entirely from these Dominions.

Fortunately, we have some details from the advertising columns that show the reasons for the vigorous protest. Some of the advertisements of the day furnish a good idea of the advertising specialist of the old time who is still with us, and his advertisements make it very clear that human nature has not changed in the meantime. One of these that is typical of its class and that is of special historic interest because of a hint that it contained with regard to professional fees, as well as the fact that it exploits that favorite medical advertising topic "the diseases of men," seems worth while reproducing here. It is the announcement of one Dr. Peter Billings, who apologizes for his "emptytial Proceeding" on

the score of the benefit to the community that will surely result from a knowledge of his presence among them, for the medical advertiser has always posed as a philanthropist. Dr. Billings proclaims to the public that he had been his Majesty's surgeon in both the army and navy, "but being a stranger arrived in town lately without a publication of his profession may be a long time unknown to the great Detriment of the General part of Mankind; and some may invidiously reflect and scornfully deem it an emptytical Proceeding; notwithstanding it is only copying after many Ancient Precedents of both ancient and modern; but such Satyrs are not worthy of Notice because it is an Incumbent Duty upon Every Man to prefer a public Good before a Private Interest," and so on, in a sentence that runs through more than a page and concludes, as many of the medical advertisements of the day do, with what is presumed to be a very attractive line in Latin (of course, from Horace) to show his erudition. At the end of this long introduction he puts the following appendix, which contains an interesting medical allusion not without social historical significance:

N.B. That Contagious Distemper, so frequently happening to the bold Adventurers in the Wars of Venus, (when recent) will be cured by Him, for Three Pistoles in Hand, tho' the common Price is Five Pounds, all over North America. And all other Cases curable in Physic, and surgery, proportionable according to the several Circumstances of the People. He has also other Matter to publish; particularly, an elegant medicine to prevent the Yellow Fever, and Dry Gripes of the West Indies. At Mrs. Douglass's, in the Smith's Fly, near Burling's Slip; or at the King's Arms in Broad Street.

Newspaper publicity and protest had their effect though it was not till seven years later (June 10th, 1760) the first New York Statute regulating the practice of medicine was enacted by his honor the Lieutenant-Governor, the Council and the General Assembly. Its preamble, which is perhaps an echo though a rather distant one of the newspaper discussion of seven years before, runs: "Whereas many ignorant and unskilful persons in physick and surgery in order to gain a subsistence do take upon themselves to administer physick and practice surgery in the City of New York to the endangering of the lives of many of their patients; and many poor and ignorant persons inhabiting the City, who have been persuaded to become their patients, have been great sufferers thereby: for preventing such abuses for the future be it enacted, etc."

Mr. Purrington, counsel for the New York State Medical Society, has given a brief resumé of this and subsequent New York laws relating to medicine and its practice in an article published in the *Medical Record* October 23, 1886, "How New York has Regulated by Statute the Practice of Physic and Surgery," by W. A. Purrington, Esq.:

This act provided that no one should practice as a physician or surgeon in said city, unless first examined in physic and surgery, and approved and admitted by one of His Majesty's Council, the Judges of the Supreme Court, the King's Attorney General, and the Mayor of the city for the time being, or any three of them, calling to their aid in making such examination such proper person, or persons, as they in their discretion should think fit. A testimonial in a form prescribed by the statute, was given to a successful candidate, and the penalty for practising without such authorization was Five Pounds for each offence, one half thereof for the use of anyone suing for the same, and the other moiety to the churchwardens and vestrymen to the city for the use of the poor. Exemptions were made of persons in practice before the publication of the Act and persons bearing His Majesty's commission and in his service as physicians or surgeons. It will be noticed that no attempt is made in this statute to determine the range of examination or prescribe the term of study.

It was back to the plan of an examining board as created by this law that legislation came nearly one hundred and fifty years later, when satisfactory regulation of the practice of medicine was at last obtained for New York.

The principal defect in this first law was that it was not retroactive, and the immense number of irregular practitioners already in the city were not touched by it and continued to ply their vocations. Dr. Peter Middleton, in his "A Medical Discourse, or an Historical Inquiry into the Ancient and Present State of Medicine" (New York, Hugh Gaine, 1769), complains that, unfortunately, a great many intelligent folk prove to be very foolish whenever there is question of medicine. As a consequence, quacks and charlatans were encouraged to the detriment of good health and progress in medicine. He made his strictures in the matter some seven years after the passage of the act already mentioned:

Yet many, too many, are the instances, even in this place, of men, otherwise valuable for their penetration and good sense, who have given up their own judgments to the opinions of the credulous vulgar; and joining in the belief of nostrums, or secret cures, have countenanced and even

employed the most obscure and superficial traders in physic. While the practitioner of modesty and real merit, conscious of his own integrity and knowledge, and scorning the little arts of such licensed freebooters and secret homicides or to stoop to the unreasonable humors or petulance of every simple employer, has often had very circumscribed practice; or has been abandoned in favor of some ignorant or mercenary sycophant. This conduct in such men will ever discourage genuine worth and the prospect of farther discoveries in that useful profession; which in all time, and among all polite nations, has ever been esteemed honorable, and worthy of men of the first rank and learning.

Such being the state of physic here, what wonder is it that this city should be pestered in so remarkable a manner with the needy outcasts of other places, in the characters of doctors; or that this profession of all others, should be the receptacle and resource for the refuse of every other trade and employment? The wonder indeed is that we should be such dupes to their effrontery as to employ them, or buy their pernicious compositions; not that they should frequent so beneficial a market. So amazingly easy of belief are some people in these miracle-mongers, that, as if there was something creative in the name of Doctor, seldom any other test of their skill is required than their assuming that title; so that this appellation with a competent presence of mind and a string of ready-coined cures, carefully propagated by such as find their account in carrying on the cheat, have seldom failed of procuring traffic in New-York.

The coming of the British military rule did not decrease the number of advertising specialists and charlatans, but rather, if anything, seemed to increase them. Rivington's *New York Loyal Gazette*, October 25, 1777, printed a rather long advertisement from one of these newly arrived London claimants of wonderful powers in medicines. Apparently the disturbed times had led a number to think that they might make their way over here in America, and Dr. Flugger was one of those who left his country, perhaps for his country's good, in order to confer his services on the benighted rebellious colonies. The advertisement runs:

Dr. Flugger, from London, where, during many years' practice, he has had the honour to be employed by many persons of distinction and character, and the happiness to perform a number of surprising cures, as cancers, scurvy in the blood, leprosies, ulcers in the throat, lungs, and legs, of many years standing, the king's evil, fistulas, consumptions, fevers, and agues, and other disorders incident to the human body, of which he can give faithful testimony to any person interested in the inquiry, begs leave to acquaint the public that his house is in St. George's Square, Queen Street, No. 149, near Peck's Slip where advice may be had, and proper attendance in all cases of physic and surgery; also the following sovereign Medicines. His well known Lignorum Antiscorbutic Drops, which

perfectly cure the most inveterate scurvy, leprosy, old sores or ulcers, the evil, fistulas, piles and pimpled faces, of ever so long standing, and every other disorder arising from a foulness of blood. They may be taken by persons of the most delicate constitutions, without the least injury or hindrance of business: Price 9s. the bottle with printed directions. *Note* 1s. returned for the empty bottles. His Asthmatic Drops, being a speedy cure for all colds, coughs, spitting of blood, asthmas, hectic and consumptive disorders, likewise the atrophy of insensible wasting of the body, affording instant relief in shortness of breath, wheezing and tickling coughs, and the most violent whooping coughs. Price 8s. the bottle with printed directions. *Note.* In a slight case one bottle is generally sufficient. The true and original Dr. Stoughton's Cordial Elixir, known by the name of Stoughton's Drops. It procures a strong appetite, helps digestion, and seldom fails of giving immediate ease in the most violent fits of the wind colic in the stomach or bowels of men, women and children, especially against giddiness, deafness, blear'd eyes, want of appetite, gross and thick humors; Price 2s. the box, with printed directions. Also many others too tedious to insert.

In 1792, some thirty years after the first law, a similar act, now under American legislation, was passed and this, too, had a preamble referring to the quackery so rife in the city, for "many ignorant and unskilful persons presumed to administer physic and surgery within the city and county of New York, to the detriment and hazard of lives of the Citizens themselves." Manifestly the coming of selfgovernment had not only not put an end to impudent impositions on the people, but there was even question as to whether personal liberty in this matter was now not more abused than it had been under the English government. This act provided:

That after its passage no one should practise physic or surgery within said city before he should have both attended the practice of some reputable physieian for two years, if a graduate of a college, or for three years if not a graduate, and been examined, admitted, and approved by the Governor, Chancellor, Judges of the Supreme Court, Attorney-General, Mayor, and Recorder, or any two of them, taking to their aid three respectable physicians with whom the candidate had not "lived to acquire medical information." In addition to the penalty of seven pounds for practising without a testimonial of qualification, payable, half to the person suing for it and half to the use of the poor, it was also provided that no person so practising could bring an action to recover for services or medicines. Persons practising before the passage of the Act, persons rendering gratuitous aid in emergencies, practitioners of neighboring states or counties called into consultation on a particular case, and persons having the degree of doctor of medicine from any college or university of the United States having authority to confer it were all exempt from the provisions of the Act.

There was an unfortunate leniency clause in the act which seriously hampered its effectiveness. This provided that before any one became subject to its penalties, complaint must have been made of him in writing by three reputable citizens of the Mayor or Recorder, who, if he deemed it expedient after inquiry, should notify the accused practitioner, whereupon he should remain with respect to his after practice exposed to the penalties of this act until he should obtain a proper testimonial as provided for in the statute. A good deal of the legislation for the regulation of the practice of medicine in this country has been vitiated in this way. Legislators probably under the influence of suggestion from those who are in sympathy with the irregular practice of medicine, have permitted loopholes of various kinds in laws, on the presumption as it were, that otherwise injustice might be done to well-meaning individuals not quite aware of their transgression of law. As a matter of fact, quacks have, as a rule, been utterly thoughtless of the injustice and often serious bodily harm that they did to the suffering patients, and have deliberately and quite consciously pursued their vocations. Quackery is always consciously criminal, but has been treated as if it were, at most, indeliberate malice.

This law of 1792 applied only to the City and County of New York; the first general law for the State was enacted five years later, in 1797. This law had no preamble, but required that "no person practising physic or surgery at the time of the passage of the Act should continue to so practise without satisfactory proof to the Chancellor, a judge of the Supreme Court, a master in chancery, or a Judge of the Court of Common Pleas, that he had practised for two years next preceding October 1st aforesaid, or had studied that time with a reputable physician or surgeon, and had filled a certificate to that effect with the County Clerk." The Act further provided that no other person should practise physic or surgery without a certificate from one or more physicians or surgeons that he had studied medicine for four years under the preceptors signing the same, and that he was qualified to practise.

Some of the principal features of the law show that not a little thought had been given to fixing the basic law regulating the practice of medicine. A penalty of \$25 payable half to the complainant and half to the county was provided for persons practising without authority as aforesaid. The term of study for college graduates was made only three years. Diplomas were still recognized,

but became licenses only on being filed with the county clerk. Students were allowed to practise under the immediate supervision of preceptors. Residents of another State might practise in New York on a particular occasion at the special request of a practitioner qualified under the Act. Counterfeiting the certificate intended by the Act was punishable by a fine of \$100 and the forfeiture of the right to practise. Gratuitous practice in emergency was still allowed.

In 1806 an Act was passed which authorized the incorporation of medical societies and empowered them to examine, by their censors, medical students, and confer diplomas constituting a license to practise physic or surgery, or both, within this State. It further provided: "that from and after the first day of September next, no person shall commence the practice of physic or surgery within any of the counties of this State until he shall have passed an examination and received a diploma from one of the medical societies, to be established as aforesaid; and if any person shall so practise ever thereafter be disqualified from collecting any debt or debts incurred by such practice in any court of this State."

There was so much difficulty encountered in securing the passage of the law establishing the State Medical Society and the County Medical Societies, in April, 1806, that it very nearly failed of enactment. It seems interesting to recall, then, that earlier in this same session, on February 28, 1806, a bill was passed granting to a certain John M. Crous the sum of \$1,000 for a cure of hydrophobia, which he was said to possess. About this same time in England, or a little bit earlier, the British Parliament had appropriated a much larger sum than this to the famous charlatan, Dr. St. John Long, for his well known liniment, which was considered to be an infallible cure for rheumatism of all kinds. It is not so surprising, then, that the Legislature in New York should have yielded to a like temptation—under proper lobbying influences, it is to be presumed. Most of the legislators, however, were the descendants of the old Dutch burghers, and had a proper sense of economy about them. They were not quite so easy to fool as they seemed. They fastened a good string to their appropriation of \$1,000, by requiring Mr. John Crous to file a bond before the Supreme Court of the State for \$2,000 in order to make ample provision for the return of the \$1,000 if, after the end of four years, it should prove that his remedy was deceptive and did not really pro-

duce the cures that so many witnesses were ready to attribute to it. The prescription which was supposed to be curative was to be printed in the newspapers of the State for three weeks, in order to call public attention to it.¹

This law placed the regulation of the practice of medicine absolutely in the hands of the organized medical profession of the State. It began to be modified almost at once, but the county societies held the power to license practitioners in medicine until 1880. Their exclusive control, however, was held for only three years, for under the law of 1809 graduates of the State Medical Schools, on a degree granted by the Regents, were entitled to practise without examination by the censor. Dr. Floyd Crandall (*N. Y. State Medical Journal*, September, 1917) called par-

¹ Of the further history of Crous and his remedy unfortunately there are no data at hand. Just what his prescription was I have been unable to discover, nor even the ultimate result as to whether he was called upon by reason of his bond to return the \$1,000. It is of medical interest to note that even at this early day hydrophobia was so often seen and so much feared at the beginning of the nineteenth century that a bill like this was passed in the hope of preventing a fatal issue in the cases at least.

Rabies or hydrophobia was evidently a rather common disease in the colonies and there were many recommendations of remedies for it. The surprise is that Mr. Crous's remedy should have attracted so much attention since apparently an absolutely certain cure for the disease had been announced in the newspapers evidently with the best of intentions and without any wish on the part of the gentleman who took the public into his confidence to make money out of it. All that the ailing had to do was to go out and pick the herb described and prepare the remedy for themselves. The note is found in the *Weekly Postboy*, November 6, 1752, *Med. Reg.*, 277:

Mr. Parker: As the terrible Distemper from the Bite of a mad Dog, has but since a very few Years been known in America, and has lately spread from the Southern Colonies into this, it may be of general Use to publish a Cure of that Disease, which Dr. Mead published in the Newspapers in England. His Authority is such, that it can need nothing to be added to it, to recommend it, further than what he says of it, in his Treatise of Poisons, viz.:

"I can safely affirm, that (whether any outward application was made or not) I have never known this Method to fail of Success, when it has been followed before the Hydrophobia (Dread of Water) began: Altho' in the Course of about 30 Years (besides the Experience made by others both in Town and Country) I have used it a Thousand Times. I have often wished that I knew so certain a Remedy in any other Disease.

A Certain Cure for the Bite of a Mad Dog.

"Let the Patient be blooded at the Arm nine or ten Ounces. Take of the Herb called in Latin *Lichen cinereus terrestris*, in English, *Ash coloured ground Liverwort*, cleaned, dried and powdered, half an Ounce; of black Pepper powdered, two Drachms: Mix these well together, and divide the Powder into four Doses, one of which must be taken every Morning, fasting, for four Mornings successively, in half a Pint of Cow's Milk warm. After these four doses are taken the patient must go into a cold Bath or a cold Spring or River, every Morning fasting, for a Month; he must be dipped all over, but not stay in (with his Head above Water) longer than half a Minute, if the Water be very cold. After this he must go in for three times a Week for a Fortnight longer.

"As this Medicine, I believe, is not kept in the Shops in this Province, and may be known to few even of the Practitioners, I send you a Specimen of it, as it grows on the Ground, usually among Moss on cold Clay Ground inclining to moisture. (Said specimen may be seen at any Time at the Printer's hereof.)"

ticular attention to the three forces which during the one hundred and one years from 1806 to 1907 contended for control of the power to license. These were, first, the organized medical profession; second, the Medical Colleges; and third, the State of New York acting through the Regents of the University. In the midst of the contentions of these, the legal regulation of the practice of medicine suffered untold harm.

The only penalty for practising without license in the law of 1806 was the inability to collect fees by action at law. An attempt was made to correct this defect the following year, and "every person who shall so continue to practise unauthorized shall forfeit and pay the sum of five dollars for every month such unauthorized practice is continued." The law was loosely worded, and it provided "that nothing in this act shall be construed to debar any person from using or applying for the benefit of any sick person any roots or herbs, the growth or produce of the United States." This permitted a horde of "botanic practitioners," and the looseness of legal verbiage which allowed all sorts of abuses to creep in was now launched on its course. In 1813 a further revision of the law omitted all penalties for practising without authority.

In 1827 the Revised Statutes of the State were enacted, and a definite effort was made to incorporate satisfactory provisions as to the practice of medicine. Mr. Purrington says: "It was clearly the intent of the framers of the law to forbid the practice of physic and surgery to any one not a member of a county society, and not only to regulate the licensing of practitioners, but to provide for the good behavior of licentiates by prescribing a legal method of expelling members of county societies and forfeiting their right to practise medicine for 'gross ignorance or misconduct in his profession or immoral conduct or habits.'"

No one was to be examined for a license by the Medical Societies unless he had studied for four years under a licensed physician or surgeon, or three years in a college, or a complete course of all the lectures in an incorporated medical society. Further provision was made that the Regents' degree of M.D. should be conferred on persons who had studied for three years under a preceptor and attended two complete courses of all lectures delivered in an incorporated medical college. No one could practise unless he had a license or a diploma from an incorporated Medical Society of the State, or had the degree of M.D. from a university, or being author-

ized to practise in another State or country and having a license or diploma from a medical college or society in such State or country should file a copy of his license or diploma with the county clerk, and give the Medical Society of the county satisfactory proof of having followed the plan of study prescribed for students in this State.

According to the revised statutes, an unlicensed practitioner could not recover his fees at law, and was guilty of a misdemeanor punishable with fine or imprisonment at the discretion of the court. This penal clause was repealed three years later, and a penalty of twenty-five dollars was prescribed against unlicensed practitioners, but this term was not to apply to any person "using or applying for the benefit of any sick person any root, barks or herbs, the growth or produce of the United States." The "botanic practitioner" is once more at work securing his own exemptions and emasculating the medical regulation law.

In 1844 an act was passed, of which Judge Beardsley declared "quackery may certainly boast its triumphant victory in a complete establishment by law." This was enacted under the specious pretense of making unlicensed practitioners liable in damages for malpractice, as well as licensed physicians. It made it a misdemeanor to practise without a license in case of gross ignorance, malpractice, or immoral conduct.

As time went on the medical regulation laws became more confused and less efficient. The law of 1874 was characterized by Mr. Purrington, the counsel for the New York State Medical Society, as "a model of all that a law should not be." Most of these laws were not enforced, but it is said that the effort to enforce the law of 1874 resulted in the open bidding of disreputable societies for the fees of candidates plucked by more respectable bodies. Unfortunately, the compiler of the Penal Code accepted it as stating existing law, and thereby introduced into the code some of the confusion which that legal instrument was expected to do away with. Attempts to make the conditions better only served to make confusion worse confounded, though the requirement of the law of 1880 that physicians should register their licenses with the County Clerk was a valuable step in advance. The medical societies tried to bring order out of the chaos, and presented bills to the Legislature of 1884-85 and 1885-86, but these failed because of lack of unanimity among the physicians themselves as to what regulation

was necessary. Divisions among physicians even more than lobbying legislation have been the source of unfortunate laws. Legislators have often said, "whenever a bill is brought here that the doctors themselves agree on, we will pass it."

It was not until 1872 that a law was enacted by which the principle was first established that licenses should be granted by a State Department, and not by those engaged in teaching and practising medicine. This principle was limited in application, and the other two sources of licensure—the medical societies and the colleges—continued to hold their powers. In 1880 the Regents were given additional power, and the societies ceased to have their previous legal status in this matter. The power of licensure was now divided between the Regents and the colleges. Ten years later, in 1890, the medical degree as a license to practise was legislated away and the power to grant licenses was placed wholly in the hands of the Regents. By this and subsequent legislation, Boards of Medical Examiners representing the regular medical profession and two sectarian schools of medicine, were created, and a license to practise was issued only after passing their examination.

It was not until after the beginning of the twentieth century that the principle was formulated by Commissioner Draper, the head of the New York Educational Department, that "the State should establish a fundamental standard for all medical practice, which would protect the people against ignorance and let those who can come up to that standard practice." His suggestion was that the State, which recognizes no sect in religion, should recognize no sect in medicine. The final step in the regulation of the practice of medicine then came through the enactment of the law of 1907, which abolished the three boards of medical examiners—regular, homœopathic and eclectic, and doing away with the examination in therapeutics made the licensing to practise depend on passing the examination of a single board.

It had taken years to bring appreciation of the fact that therapeutics is such a changing and as yet uncertain subject, and so much dependent on elements that are not strictly scientific, that recognition of divisions of opinion in this is fatal to real advance in professional medicine and perpetuates old-fashioned notions. To be allowed to practise medicine, a man should know the sciences directly connected with medicine, and then be allowed to treat his patients as he saw fit, without any regard to schools or traditions.

This made, as Dr. Floyd Crandall said, diagnosis the foundation stone of medicine. It led to the abolition of sectarian designations on signs, and made the first step toward bringing physicians of all schools more closely together.

Legal regulation of the practice of medicine developed slowly enough, and even down to our own time unfortunate conditions encouraging medical sects of various kinds continue in the law. Another phase of medicine, however, that of the sale and consumption of immense quantities of remedies which promise the ailing very much and accomplish little that is not harmful, is almost in the same unregulated state that can be traced nearly two centuries ago. We still permit charlatans of all kinds, whose one purpose is the making of money, regardless of the harm they may do to the ailing, to ply their trade and take advantage of poor suffering humanity. It is perfectly possible to quote from our colonial newspapers advertisements of remedies of various kinds that are anticipations of the advertised claims of our proprietary medicines of the modern time. There are hopeful signs, and New York's regulation of food and drugs, and the recent effort of the New York City Department of Health to require the publication of the formulas of such remedies on the bottle, though overruled by the Supreme Court at this time, will doubtless come to relieve the situation. In the meantime some of these old advertisements deserve a place in our history as a reminder of the age-long evil that is here represented. Quackery had been in evidence in the Colony for a long time before the suggestion to regulate the practice of medicine came in, and fortunately for history the newspaper advertisements furnish details of it that would otherwise have been lost. Proprietary remedies of various kinds were advertised with quite as much ingenuity as in the modern time, and, indeed, the surprise is to find how many of them were anticipating our most progressive medical advertisers. The late Mr. Kelby collected a number of these medical advertisements from the early colonial newspapers and republished them in the *Medical Register of New York* during the late sixties. Some of these cures are marvelous almost beyond belief. Here, for example, is a cure-all for skin diseases to be had for the asking, which needs only to be smelled to be effective: "John Chapman, makes and sells a Smelling Mixture to cure the Itch, or any other sort of breaking out whatsoever, by the Smell of it, even if a person had it from his

Birth: It is to be had at his Room at Mrs. Dimmock's in the Broad Way, next door to the Post-Office."

Wonderful Indian remedies have always had a special attraction and still continue to have it. It is not surprising, therefore, to find advantage taken of the popular notion that the Indians had wonderful secrets of therapeutics, especially when these could be confirmed by the advertisement of local cures effected by them. We still, a century and a half later, have just the same methods of attracting attention exercised among us, so that it would be idle to think that merely the poorly informed people of a time when medicine was very little developed were the only ones who could be thus taken in. Here is an announcement from the *Royal Gazette* of October 3, 1778. (*Med. Reg.*, 1880): "James der Kinderen, Who hath lately arrived from Philadelphia has brought with him an Indian Herb, which hath performed remarkable cures, by making a tea of it, and taking it on going to bed, it has, in particular relieved a young woman in about two or three hours, from a high fever, after she was given over by two or three Doctors, that attended her at the house of Edward Tatnells, in Wilmington, it hath likewise been found efficacious in the camp fever, so called, Pleurisy, and in many other inward complaints, divers persons after taking it, have acknowledged the virtues thereof."

The modern proprietary medicine advertiser only copies in our time the ways of his colleague of nearly two centuries ago. Here, for instance, was the suggestion that a trial might be made of this wonderful Indian remedy: "Any person desirous of making trial of this useful Herb, may find me by applying at Benjamin Hildreth's, Spruce Beer Brewery, a little above the Brick Market, at Peck Slip, or on board the Sloop *Polly*, lying at the King's Yard. Price 2 s."

It would be perfectly easy to illustrate phases of all our irregular medicine of the present time as they develop by anticipation in the Colony and in the early days of New York State. Comparative historical studies of this kind might make us realize that these are the sort of abuses that cannot be expected gradually to correct themselves, but must be dealt with directly by legislative regulation if people are to be saved from impudent imposition of the most flagrant kind that not only cheats them of their money but also disturbs their health. We realize now that it is not so much that the remedies and modes of treatment so highly recommended do

harm directly, as that they so often prevent people from securing at once such medical or surgical assistance as will be of real benefit to them.

New York Colony was fairly flooded with quack nostrums of all kinds, which, of course, secured their vogue through the advertisements in the newspapers. All that is necessary for most people is to have something repeated to them often enough, and they accept it, if not as gospel truth, at least as well worth consideration, and when their health is concerned they are willing to spend money trying it out. There must be large claims made, and the larger the claims the surer the attention, and so the advertising columns of old New York papers often contain details that are very interesting from the medical standpoint, but above all from the more modern standpoint of the psychology of advertising and the psychology of the individual seeking a cure for some disease that he has, or, oftener still, some disease that he thinks he has. What these remedies would cure, or at least one of them, is very well told in a single paragraph of the *New York Weekly Postboy* for June 18, 1750. Apart from the spelling and certain quaint old-fashioned expressions, the advertisement might very well be transferred to the account of some of the very wonderful curative oils named after Saints, or electricity, or magnetism, or letters of the Greek alphabet that we hear much of in the modern time. This British oil must have been much used, for advertising was quite as expensive as in our time, in proportion to the value of money, and the population was not large so that a considerable number of the people must have bought the remedies to make them lucrative.

"Betton's true and genuine British Oil, which cures, if curable (by God's blessing) the following Diseases, viz. All old Contusions and Contractions of the Nerves, Strains, Bruises, Ulcers and Old Sores, Dropsy, Rickets, Festers, Lameness, Rheumatick, Pleuretick, Sciatick, and Scorbutick Disorders, Itch, Swellings, Inflammations, St. Anthony's Fire, gives Ease to the Gout, greatly relieves in the Palsy, knits broken Bones, stops Blood and expels Poison: To be sold at the New Printing Office."

Advertisements of such old-fashioned remedies as Dr. Lockyer's Pills, Bateman's Drops, Godfrey's Cordial, Stoughton's Elixir, and other compounds, some of which have maintained their reputation down to our time in popular medicine, are rather frequent. John Mulligan, at his shop in Beaver street, advertises in the *New York*

Weekly Postboy for July 19, 1749, that he sells "Anodyne necklaces for children, the famous British Oyl so much noted in curing rheumatism; choice Liquorish Ball; best Turkey and India Rhubarb; likewise drugs and medicines in general, wholesale and retail." The next year Patrick Carryl, at the sign of "The Unicorn and Mortar," in Hanover Square, advertises "a compleat assortment of drugs and medicines as also Perry's and Betton's British Oil, Cripple Curing Oil, Bateman's Pectoral Drops, Turlington's Balsam of Life (this is found in most of the lists), Duffy's Elixir, Anodyne Necklaces (they were amulets for children, made of pain killing colored stones), Stoughton's Bitters, Hungary Water, Whooper's Female Pills, Lockyer's Pills.

The popular prejudice against mercury, due to its abuse, was constantly exploited by the old-time makers of remedies. Their advertisements would not have appealed to a large enough circle of readers to make them profitable if there had only been question of this, however, so their syrups and mixtures and liquors were proclaimed good for nearly everything under the sun and a few other things besides, while at the same time they were pronounced absolutely harmless. Here, for instance, is the advertisement for Velnor's Vegetable Syrup, printed in *The Royal Gazette* shortly before the end of the Revolution. A guinea a bottle seems to be a good deal for a remedy, but then I suppose that not only the advertisement had to be paid for, but also the printer for selling it, and then there was free advice for those who might want it. The vendor probably got his guinea a bottle, for it pays to advertise and the ways of the quack are founded in human nature and do not change from generation to generation. The advertisement runs as follows, and has all the modern allurements,—vegetable, harmless remedy, with free advice and testimonial gratis:

Velnor's Vegetable Syrup. An approved Medicine for the Cure of Venereal and Scorbutic Disorders.

The Proprietor of that medicine fully convinced of the efficacy of it both to the Southward and here, offers it to the public as a certain, safe and speedy cure, for two of the most inveterate diseases incident to the human frame, and with properties no medicine boasts beside, viz—Being wholly free from mercury, formed from Vegetables only, and while the patient is relieved he feels additional strength from its balsamic qualities. It purifies the blood and juices removing all obstructions; and a few bottles will eradicate the most inveterate and confirmed scurvey, or venereal where repeated salivation have failed.

For Valetudina or persons emaciated by long disease, or what is equally as bad by taking too much mercury, this medicine is particularly recommended: It also effectually cures all complaints of the urethra attended with any difficulty of making water, ulcerations, &c. The innocency of the remedy is its great recommendation, as women even pregnant or the infant at the breast may take it with success. It restores loss of appetite, occasioned by indigestions, or any bilious obstructions in male or female.

The Syrup is to be had of the Printer of this Paper, in quart bottles at one Guinea each, with proper directions. A treatise on the virtues of the medicine, and a number of well authenticated cures, may be seen at the Printer's.

Any Person afflicted with the above disorders, may by addressing a line to the Proprietor of Velnor's Vegetable Syrup, at Mr. Rivington's, receive from him gratis, advice of personal attendance; he is induced to wish it, being many years in full practice, as a Surgeon his particular attention has been paid to every species of Venereal and Scorbatic complaints.

All these are ridiculous enough and would be very laughable only that we, after one hundred and fifty years, are in the midst of the same kind of abuses. The legal regulation of the practice of medicine has brought people some protection against the ignorant pretender who would exploit their fears and make money out of the credulousness of the ailing. We still permit the compounder of medicines, even more impudent in his ignorance and almost without pretense of knowledge to pursue his avocation, just as he did in the eighteenth century. The attempt of the New York City Department of Health to regulate the sale of these medicines by requiring that the formula should be printed on the label so that people might judge whether there was any reason for thinking that it might do them good, was not upheld by the Supreme Court of the State, and we are evidently not yet ready for this development of social medicine. Perhaps the knowledge that this impudent imposition on the ailing has been going on for centuries in just the same way, in spite of our advance in knowledge, may lead to the necessary reform.

CHAPTER VII

EPIDEMICS IN NEW YORK

THE history of epidemics in New York represents at once a magnificent chapter in the heroism of the medical profession, and an element in the history of medicine that makes it easy to understand how almost impossible medical progress was until epidemics could be prevented or greatly limited. For New York City has had some dire experiences, frequently repeated, with practically all of the contagious and infectious diseases. We think of the serious epidemic diseases as of the distant past but they are in our recent history. Some of them were, almost needless to say, eminently dangerous for those brought intimately in contact with patients, and all of them were *thought to be so* in earlier times, and therefore presumedly involved the gravest risks for medical attendants. Physicians proved, however, quite willing to take all the chances in their effort to save those already ailing, and prevent the spread of the disease. Owing to the crowded condition of the city and the large numbers of immigrants who came, the dangers from epidemics were much greater in New York City than anywhere else in the country. Probably no higher tribute could be paid to the thoroughgoing professional spirit of New York's physicians than the fact that in the face of these awful conditions they were not found wanting in their readiness to serve even the very poor.

Yellow fever, strange as it may seem from the experience of the last few generations when we have come to think of the disease as almost exclusively tropical, ravaged New York City at intervals for nearly a century. As until 1900 it was supposed to be an intensely contagious disease, every physician who treated these patients felt that he was taking his life in his hands, yet very few of them proved to be shirkers. Typhus fever came to New York over and over again with the tide of immigrants that set in shortly before the middle of the nineteenth century, though it had been seen on various occasions before, and always exacted a severe death

toll. The typhus epidemics of the mid-nineteenth century carried away many physicians and attendants of the sick. Cholera came even more repeatedly, and always with serious fatal results, sometimes with a mortality so high as to be alarming even for the strongest hearted. Before the proper enforcement of vaccination, small pox came to the city as an epidemic practically every five or six years as the protection afforded by vaccination ran out. Sometimes these epidemics were not severe and produced only a passing scare, but on many occasions the disease raged with violence and awful fatality, demanding the highest type of heroism from physicians and those who could be secured to care for its victims.

No wonder that Dr. John Watson should have been able to say: "In the philosophy of epidemics and endemic diseases the literature of America is peculiarly worthy of notice. In no country has the subject been so thoroughly investigated as here; and in no other place so thoroughly as in our own city."

The stories of some of the worst of these epidemics deserve to be briefly retold as a chapter of our history, because otherwise it will be quite impossible to understand the conditions which old-time physicians faced. Human nature is inclined to forget the serious difficulties of the past and the stern obligations that lay on our medical colleagues of two and three generations ago in the care of these patients. We are apt to be critical of their lack of progressiveness, but there is no brake on the wheels of medical progress so effective as having to turn aside from scientific observation and investigations to care for epidemic disease, especially among the crowded city poor. The story of these epidemics, besides, should prove an incentive to the further development of sanitary science and the improvement of health conditions. It is easy to see now how much has been accomplished, and how discouraging the conditions were in the midst of which physicians had to work. If anything like similar advances continue to be made in our time, and similar success attends our efforts, undoubtedly the rôle of epidemic disease will become ever so much less than it is, and we may even look forward to the time when the "ordinary children's diseases" will no longer be ordinary.

SMALL-POX

Small-pox was introduced into this country almost with the first

settlement. There is even some question whether an epidemic which carried off a great many of the Indians in Massachusetts just before the Pilgrims landed was not this disease, which had spread from some white fisherman along the coast of Maine. Probably the "yellowness" which the Indians described as the most characteristic symptom of that epidemic was due to some other disease, though not to yellow fever, for the disease in question occurred in the winter time. However that may be, small-pox soon broke out among the New England colonists and was transferred to the Indians, among whom it raged with the violence it has always displayed when attacking a people hitherto unsubjected to it. The early settlers were a little bit inclined to think that this particular severity of the disease among the Indians was a Providential interposition on behalf of the struggling colonists. The first epidemic in the Dutch Colony of New Netherlands was probably in 1663, following floods that had worked serious havoc and an earthquake the only one I believe in New York's history of any significance which struck terror into the inhabitants even though it did not do much material damage. Almost regularly, at intervals of five or ten years after this, a number of cases of the disease would occur, with serious epidemics whenever a sufficient number of young people unprotected by previous attacks of the disease had grown up into the population to provide proper contagious material for its activity.

The practice of inoculation with actual small-pox virus in the hope of producing mild cases, which became very common in Boston, and was experimented with extensively in Philadelphia, was bitterly opposed in New York, and on June 6th, 1747, Governor Clinton issued a proclamation "strictly prohibiting and forbidding all and every of the Doctors, Physicians, Surgeons, and Practitioners of Physick, and all and every other person within this Province, to inoculate for the small-pox any person or persons within the City and County of New York, or pain of being prosecuted to the utmost rigour of the law."

Some idea of the prevalence of small-pox before vaccination can be gathered from this announcement in the *New York Weekly Postboy*, October 16th, 1752. The paragraph is evidently meant to give reassurance to those who might wish to visit New York City but who feared the possibility of small-pox being present. Therefore, the editor says: "We are assured that there are now

very few families in this city but what either have or have had the small-pox; and that we have good reason to hope the City will soon be clear of that distemper."¹

The disease was so common that very few adults of maturer years failed to be without the protection which an attack of the disease furnishes. There are letters from mothers at this time telling of their pride in their daughters' good looks, and how they expect them to make good marriages unless the small-pox should spoil their beauty, for that was a factor always to be counted with in life, and few could possibly hope to escape it.

Immediately after the introduction of vaccination, small-pox lessened in virulence, but epidemics of the disease continued to occur at intervals from seven to ten years, that is, about the time when the protection afforded by vaccination began to be lessened in the great body of the community who had been scared into vaccination during the preceding epidemic, and among the growing young folk who had not as yet been vaccinated. These epidemics used to cause rather serious migration from the city and interfere with the visits of people from outside the city on business, but the last serious disturbance of that kind came from the epidemics of the seventies of the nineteenth century.

In 1871 there were over 3,000 cases of small-pox in the city, with more than 800 deaths. In spite of the fact that consequent upon the scare produced by the disease, 100,000 persons were vaccinated, small pox continued to show itself in New York, and during the winter of 1874-1875 over 2,000 cases of small-pox were reported. The disease was particularly virulent, and as a little more than one-half of the cases were treated at home, 517 of them proving fatal, the mortality of the epidemic, even in home surroundings, was more than forty per cent. The problem of the prevention of small-pox by the health authorities was taken up

¹The same paper had announced in its issue for August 3rd, 1752, the state of affairs with regard to small-pox in Boston. Evidently the New England metropolis was about ready to issue the same sort of reassuring announcement as New York. "By the Boston Papers it appears, that 5059 White Persons, and 415 Blacks, have had the Small Pox in that Town, this Season, in the natural way, of whom have died 452 Whites, and 62 Blacks; and that 1970 Whites and 139 Blacks, have been inoculated, of whom 24 Whites and 7 Blacks died; that only 23 Persons are now sick with it, and but 174 that are still liable to it: The Streets and Houses are cleaning and airing; and no more People will be suffered to be inoculated there at this Time."

and a law was enacted enabling the health department to establish a laboratory for the preparation of vaccine virus. Over 125,000 vaccinations were made by a permanent corps of vaccinators, and the presence of an abundant supply of vaccine soon led to almost universal vaccination. Smaller epidemics of small-pox have occurred since, but always among those who had not been vaccinated or who had permitted the protection afforded by vaccination to run out. The history of New York City alone in the matter of small-pox and vaccination would constitute a demonstration of the value of that practice.

DIPHTHERIA

The Colonies suffered very severely from diphtheria, or, as it was called in the first historical notice that we have of it in the seventeenth century when it carried off a large family of children, "the bladders in the throat." From the very beginning acute observers recognized the membranous character of the affection which distinguished it from milder forms of croup without any such pathological developments. Some idea of the virulence that it attained can be understood from the fact that in 1755 there was a serious epidemic of *angina maligna*, as it was called, which spread all over New York and its neighborhood, and which in one town in Long Island carried off all the children of the town except two. As this was a time when families seldom had less than five or six children and usually had more up to double that number in a great many cases, the malignancy of the disease will be readily understood.

The treatment of the disease in these early epidemics is outlined in the section on Pediatrics of the chapter on "The Medical Specialties." Dr. Bard, one of New York's most distinguished physicians, gave calomel up to thirty or forty grains in five or six days to a child of three or four years. Besides, they were purged with antimony. A little later Dr. Middleton recommended "free jugular venesection, a blister over the throat from ear to ear, and other evacuants as they are indicated." Dr. Bayley recommended in the desperate cases "repeated bleeding *ad deliquium* from the jugulars, the free use of tartar emetic and other evacuants, with a large blister covering the larynx." Dr. Stearns, afterwards the founder of the New York Academy of Medicine,

placed his dependence on "calomel, cerated glass of antimony and seneca." The two first were always combined in very large doses, repeated every six or eight hours *till they complete the cure*.

That sums up the treatment of diphtheria for nearly two generations by New York's most thoughtful physicians, excellent observers, as a rule, so far as diagnosis went, and thoroughly sincere professional men, yet all of them asserted very emphatically that their treatment *cured* their patients, and, indeed, I think all of these men are on record with expressions that they practically never lost a case where they had the opportunity to institute their treatment reasonably early, and were not merely called in to see the terminal stage of the disease. Indeed, the most noteworthy fact in the history of epidemics in New York is that the physicians who had grown accustomed to treating them were quite sure that they had succeeded in finding a method of *curing* them. As we review their therapeutics now, we are inevitably driven to the conclusion that for practically all of these infectious diseases which run a definite course and for which, except in the case of diphtheria, we have as yet found no directly curative treatment, these forefathers in medicine were with the best of intentions doing ever so much more harm than good. It was not their ignorance that was serious, but it was the number of things they thought they knew that were not so! Always in the history of medicine it has been the presumption of knowledge that has been ever so much more likely to do harm, than the actual ignorance of the profession.

No wonder that epidemics were rife, for the prevalent opinion was that while the diseases were contagious, the contagion originated *de novo* from time to time, and that therefore it was quite impossible to hope for any absolute prevention of the diseases. Probably the most authoritative writing on this subject was by Noah Webster.²

The subsequent lexicographer had a mind that was avid for facts and prone to draw large conclusions from them. He was convinced that catarrh, measles, mild variola, and whooping cough

²Noah Webster, "A Brief History of Epidemic and Pestilential Diseases, with the principal phenomena of the physical world which precede and accompany them and observations deduced from the facts stated. In two volumes, Hartford, printed by Hudson and Goodwin, 1799.

were but varieties of the same disease, due to inessential modifications of the same pathological causes.

Probably nothing illustrates better how dangerous is the use of the word "absurd" in medicine (as indeed in most other questions relating to living things) than some of his oft-quoted expressions, for Webster declared that the popular opinion that measles and small-pox never originate in the human constitution without contagion is a palpable absurdity. He declared very emphatically that "the first cases of these diseases in every epidemic period are always generated in the human body without contagion." He was quite sure that epidemic periods were dependent on meteorological conditions, agitations of the elements, eruptions of volcanoes, earthquakes, and then changes of the seasons and the generation of rain, hail and snow. He thought that he was able to trace a definite connection between volcanic eruptions and earthquakes and the beginnings of great epidemics. Minor phenomena, terrestrial and celestial, were responsible for localized epidemics. He suggested that "it is probable that the invisible operations of the electrical fluid produce more effects than those which are seen, hence catarrh and other epidemics often appear before the visible phenomena of eruptions and earthquakes." As Dr. Jacobi writes in commentary, "that is, we are told, why epidemics occur almost simultaneously in America and in Europe; and that throat diseases such as scarlatina anginosa, angina maligna, cynanche trachealis and so forth are among those epidemics which belong almost to every pestilential period. Every epidemic constitution appears to begin with measles or with influenza. There follow angina and pestilential fever, dysentery yellow fever, plague."

The mania for generalization which has always caught men's fancy, kept men from more careful observation. All true advance in knowledge has come by definite information with regard to details, and hasty jumping to conclusions from a little knowledge has always led astray. Nowhere is a little knowledge more dangerous than in medicine, and so with teaching such as Webster's, with regard to contagious throat diseases, that their dissemination depends on the extent and power of the pestilential principle and that while "scarcely a year passes in which sporadic cases of scarlatina or anginas of other kinds do not appear in

particular places; but they never spread without some uncommon occurrence of causes," it is no wonder that opportunities were afforded for the spread of the disease by personal contact and by the failure to maintain certain simple precautions against disease distribution such as would surely have been organized if teaching of this kind had not been so readily accepted.

Diphtheria continued to take its toll of deaths from among the rising generation in New York all during the nineteenth century. Two and three and even four deaths from the disease were not an unusual event in a single family during the course of an epidemic. In a good many of the cases the diphtheritic involvement of the larynx led to serious interference with respiration, and the children died from actual suffocation. The name *angina suffocativa* came to be the usual term for the disease then, with excellent reason. The old mode of treatment with calomel, modified by the growing tendency of the modern time toward less drastic remedies than before, was almost the only therapeutics of the affection used with any confidence. Cruel swabbing out of the throats with various reagents replaced the blistering of the neck from ear to ear, and a hot steamy room took the place of the venesection of an earlier period.

The first hint of anything like real improvement in the treatment of diphtheria came in the use of O'Dwyer's method of intubation, though the introduction of this aroused a good deal of opposition and brought down on the sensitive heart of the inventor some very trying criticisms and contradictions. With the coming of diphtheria antitoxin the first dose of which was administered by Dr. Louis Fischer in 1894, the scourge was stripped of its terrors to a great extent and fortunately the medical profession was ready to receive the new remedy.

Undoubtedly the initiative of Dr. Herman Biggs, who, in the Fall of 1894, established an antitoxin laboratory in connection with the Department of Health of New York City, did much to popularize the use of antitoxin. The doubts expressed with regard to it in many quarters would surely have served to delay its introduction longer, only for this definite recognition of its place in therapeutics by the health authorities. This brought about the saving of many lives and of an immense amount of suffering.

Some murmurs of opposition were heard for a few years, especially as a consequence of the unexplained sudden deaths which even yet sometimes are so disturbing in serum treatment. As the first cases of diphtheria treated with antitoxin, that is, even for several years, probably received at the outside not more than a few hundred units of antitoxin, which we would be apt to consider at the present moment as scarcely more than expectant treatment, the adoption of the remedy was probably helped by a very fortunate, milder phase of the disease with distinctly less mortality than before.

In the more than twenty years that have elapsed since the introduction of diphtheria serum we have had abundant opportunity to try out the new remedy under all sorts of conditions, and it has proved quite as valuable in dispelling the terrors of diphtheria of which New York's history is so full, as vaccination has done for small pox. These chapters in our history are the best demonstration of the apparent paradox that physicians are successfully laboring and devoting themselves enthusiastically to the task of lessening the demand for their own services.

YELLOW FEVER

Yellow fever probably came to New York in sporadic groups of cases during the seventeenth century, as the result of commercial intercourse with the West Indies, for it is typically a ship-borne disease. It began to be recognized for what it was very early in the eighteenth century. In his anniversary discourse, Dr. Francis said "the direful pestilence once called 'the great sickness,' and now popularly denominated Yellow Fever, first invaded our city in 1702, during the administration of Cornbury. It was seen and described by Colden in 1741-2."

It was always introduced by shipping, and in 1720 New York, as well as some towns in Delaware, suffered from it. After this it rather frequently made its appearance in the city, and in 1743 there was a rather severe epidemic. This spread to Albany, where a number of cases of a very malignant type occurred. The bodies of the dead turned yellow, and many of those who recovered were left imbecile. The Mohican Indians suffered severely. In 1791 there was another rather serious epidemic and there were not many years after this, till the end of the century, when yellow

fever was entirely absent. In 1791 it claimed nearly 2,500 victims. In 1795 there were 732 deaths. In 1798 the most general epidemic that ever affected this country entered through the port of New York and over 2,000 people died of it in the city. As New York had but 40,000 population this was more than one in twenty of all the inhabitants. A series of epidemics occurred in the earlier years of the nineteenth century.

In his anniversary discourse before the Academy of Medicine (1847) Dr. Francis enumerates some of the distinguished New York physicians who, as health officers of the Port, fell victims to Yellow Fever. "The accomplished and skilful Malachy Treat, the intellectual Ledyard, the classical William Pitt Smith, the sagacious Richard Bayley, the ingenious Benjamin de Witt," are included in the sad catalogue.

The disease recurred in 1820 and 1821, but seemed to the people of the time to reach a climax in 1822. There had been cases of the disease in the intervening years, but not what was considered an epidemic. The presence of the disease brought about some investigation of the condition of the city. There were portions of it that were declared to be intolerably dirty, even for that time. Definite efforts were made to clean it up, and with some considerable success. The disease was gradually being brought under sanitary control, though the advances in sanitation were granted grudgingly enough by the authorities and the citizens. In 1822 the epidemic brought about a discussion for the removal of cemeteries from the city, but the committee of prominent citizens to whom the question was referred would not recommend it.

The story of this yellow fever epidemic of 1822 is illuminating for the medical history of the time. It had started from some cases brought aboard vessels into the harbor. The population was sure that it was in the air, and it actually was, though there was no idea that it spread through the air in the crude form of mosquitoes. The inhabitants were so terrified that many of them fled, and even those whose business required them to be in what we would now call Manhattan, transferred their offices up to Greenwich village, which was then out in the country. Many important city business interests, including the banks and the insurance offices, the post office, the custom house and the offices of some big corporations, found quarters in Greenwich, that is to say, in the district between Washington Square and the ferries of Chris-

topher street and that neighborhood north and south. The disease soon disappeared, however, and the excitement was only temporary.

The secretary of the Board of Health, Mr. James Hardie, gave a brief account of the various epidemics of yellow fever which had attacked New York up to 1822, which is probably the most authoritative statement. Quite a considerable literature gathered round the subject. Hardie, with the true New York spirit, derives a good deal of consolation from the fact that, unfortunate as was the condition of affairs in New York as regards mortality from yellow fever, it was still worse in Philadelphia.³

The last epidemic of yellow fever that came to New York occurred in 1870, and represented the first recurrence of this disease since 1822. Some 200 cases of the disease were treated on Governor's Island. Dr. J. C. Nott was appointed to make a special investigation of the origin and spread of the disease, and in his discussion of the subject has some interesting anticipations of modern knowledge. He suggests, for instance, that the disease is never contagious; that it has many points of similarity with the various malarial fevers; and that it may be communicated to man by insects. He was quite sure that it was a germ disease, and felt that the failure to discover the germinal cause of the disease was due to the imperfection of our microscopes. Nothing came of his suggestions in this matter, for the doctrine of the direct contagion of the disease continued to be held in the Southern cities where the disease was most common, and where it was considered that fomites were an active agent for the spread of the disease. The observer at the North who had the opportunity to study the disease only for a single brief epidemic, was considered to have scarcely grounds for an opinion, and certainly not for an opinion that should hold weight in comparison with those of men of wide experience at the South.

“An Account of the Yellow Fever which occurred in the City of New York in the year 1822, to which is prefixed a brief sketch of the different pestilential diseases with which the City was affected in the years 1798, 1799, 1803, 1805, with the opinions of several of our most eminent physicians respecting the origin of the disease, its prevalence and cure, to which is added a correct list of all the deaths of yellow fever during the late season, taken from official documents by James Hardie, A.M., New York, printed by Samuel Marks, cor. of Greenwich and Vesey Streets, 1822.” Fortunately the book is comparatively much more compact than the title.

TYPHUS FEVER

Until nearly the middle of the nineteenth century, typhus fever had not been definitely differentiated from typhoid fever, and a whole series of affections including typhoid fever and a number of diseases with continued fevers and involving marked nervous symptoms, the typhus or stricken state of the Greek derivation of the word were all considered together. It would be hard to decide just when there were epidemics of real typhus in the early part of the nineteenth century, but with a great increase of immigration from Ireland, just after the famine in the later forties, a series of epidemics of the disease came with the immigrants to this country. The disease justified its name of "famine fever," and the other of "ship fever," by raging in Ireland and on the vessels carrying immigrants, for many of them perished at sea from this disease. New York City was destined, however, to suffer severely, and its medical history for some twenty years is largely concerned with this disease.

Dr. Thomas Addis Emmet in his autobiographic notes, "Incidents of My Life" (Putnams, N. Y., 1911), tells the story of an epidemic of typhus which occurred while he was visiting physician to the Emigrant Refuge Hospital on Ward's Island in 1850. When he assumed the position of visiting physician, just after graduation, he had never seen a case of typhus fever, but he was placed in charge of the station on Ward's Island where 100 male cases were assigned to him, together with 150 beds in addition for sick women and children, all of whom he had to visit regularly twice a day, and as often as necessary at other times to see any special case. At the end of some ten days he developed an attack of "ship fever" (typhus) which was rather severe, but he was back again at his work within a month after the fever left him, though a leave of absence was generally granted for three months to recuperate. He was so much interested in the poor Irish emigrants who so sadly needed his care that feeling after the attack absolute confidence that he was free from the danger of the disease, he was anxious to get back to them, and forewent his leave of absence.

The work proved to be too hard for him and probably undermined his resistive vitality to such an extent that the usual immunity secured from an attack disappeared, and Dr. Emmet suffered from a second attack of the disease a little over a year later. This proved to be so virulent in character that to save his

life it was necessary to remove him from the hospital atmosphere on the Island and get him over to the city. An uncle vacated a house for him, and it took two months to regain strength sufficiently to resume his work. He has been told that he had been unconscious for over a week, and was so weak and emaciated that no attempt was made to put his clothing on him for fear of further exhausting his strength. He was transported on a mattress in the stern of an eight-oared barge, and was rowed down the East river to the foot of Fourteenth street. He was then placed on a mattress in the bottom of an express wagon to be driven to his uncle's house. When about half way down the river he became conscious, probably from the effect of the cool fresh air, and it was some time before he could understand where he was. It was a fine morning in the spring time, and the effect of the air and the experience was to give him an appetite and a sound sleep, and his convalescence began from that time.

The patients were treated in a weather-boarded, unplastered building, elevated some three or four feet from the ground, with windows about twelve feet apart on each side, and with ventilators in the peak of the roof. At one time there were between three and four thousand beds in the Emigrant Refuge Hospital. This temporary barrack building was found convenient at first, and then was continued in use because it served to answer its purpose very well. The windows were kept open night and day at all seasons. Dr. Emmet was so insistent on this that when windows were fastened he sometimes smashed the glass out. Visitors objected to this exposure of the patients during the winter when sometimes the snow drifted in, and Dr. Emmet was indicted by the grand jury for this evidence of inhumanity. The Legislature took cognizance of the conditions reported and sent a committee of investigation. Legislative authority ordered the hundred patients to be removed to a ward in a good warm brick building. "I had been having a mortality," Emmet says, "of less than ten per cent. under the most unfavorable circumstances as to complications, but when sixty of the first hundred had died when treated in the warm brick building, it was quietly intimated to me that I better put the remainder back in the old quarters." "Unfortunately," Dr. Emmet adds, "the physicians had to live in the brick buildings, and the mortality among them was great."

The dangers which the resident physicians incurred is sug-

gested by Dr. Emmet's paragraph with regard to the illness of his assistant, Dr. Ravenel. When Dr. Ravenel became sick, four other of Dr. Emmet's assistants were down with the fever. All these were under his care, in addition to his other duties. It was his feeling of responsibility for Dr. Ravenel, whom he had advised to come up for the examination so as to avail himself of the opportunities of gaining the experience afforded at the Emigrant Refuge, which led Dr. Emmet to spend much time in the younger Doctor's room, and exposed him so much to the contagion that the second attack of typhus was the consequence. Fortunately, Dr. Ravenel, as well as Dr. Emmet himself, escaped death, but a great many of the young physicians had fatal cases of the disease.

Dr. Stephen Smith tells the story of one epidemic of typhus which broke out while he was an interne in Bellevue in 1851. So many people, mainly Irish immigrants, were stricken with the disease that all the hospitals of the city were filled, "the Immigrant Station overflowing its cases into all of them," until finally scores of patients had to be confined in tents. Bellevue particularly was overrun with them, and during the epidemic eight out of the twelve physicians on the residence staff caught the fever and two of them died. In fact, as Dr. Smith says, part of the time there was only one interne left on his feet besides himself, and they had as many as a thousand patients on their hands. These patients were placed in long rows, some seventy in a row, many in the most desperate stages of the disease.

The hospital itself was eminently unsuited for any such burden of sickness, badly arranged, poorly ventilated, and the only arrangement for changing the air, open fireplaces, burning wood. The nurses were, as a rule, "ten day women" sent down from Blackwell's Island, "to do their time" by nursing. It is easy to understand how heavy a burden of responsibility and how many details of care for the ailing had to be assumed personally by the resident physicians, and yet the post of interne at Bellevue was looked upon as a prize well worth the getting. The competition for it was very active, the examination was very severe, and Dr. Smith records the pride he felt when it was announced that he was to have the post. Practically every man who took up the position took his life in his hands; not a few died during their term of service; and many another was seriously injured by the unhygienic conditions which prevailed, and felt the effects

of it for many years or even for life. Probably not a few, some at least of whom did not suspect the real cause, had their lives distinctly shortened by their term of service at Bellevue as medical internes.

Dr. Smith has told of the only treatment of typhus that seemed to do any good in the severe cases, at least at that time. This was Dr. Alonzo Clark's prescription of brandy in small and frequently repeated doses, which often seemed to be effective when everything else had failed and when death seemed almost inevitable. Physicians who doubted of the effect of the remedy sometimes came in to see its action, and were often surprised at the effects produced by it. Once a western professor of medicine selected half a dozen cases which seemed surely doomed to die, and these were given a spoonful of brandy every fifteen minutes night and day, and, to the surprise of the visiting professor, every one of them recovered. He could scarcely believe his eyes when he saw the look in the faces of these patients who yesterday seemed marked for death. In spite of these very favorable experiences with brandy at Bellevue, for it may be said that it seemed to be of great service at this same time in septic cases and many other conditions of apparently fatal prognosis, it has not proved efficacious in other hands, and so typhus fever still has a high mortality and has claimed its victims among young doctors, even New Yorkers, though now in the Balkans and not in New York, during the last few years.

The last epidemic of typhus fever in New York occurred as late as 1892, and included among those affected thirteen employees of the Department of Health. Four of these fell victims to the disease. The occurrence called attention to the hazardous nature of employment in the service of the Department of Health, and led to the establishment of the department's pension fund.

New York's epidemics have not been without their compensations. Over and over again sadly needed improvements in sanitary and social conditions that have been clamoring for attention for years have been delayed until the occurrence of an epidemic made the city authorities realize the absolute necessity for amelioration of conditions, and popular outcry in the matter stimulated them to take immediate action.

Typhus, after having been a scourge for many years in successive epidemics, ceased to be the dread affection that it had

been. Curiously enough, at the beginning of the twentieth century we learned that it had never entirely abandoned the city, but that cases of it continued to occur from time to time, and that evidently only the thorough sanitary control of the city kept us from having further epidemics. The story of that discovery is an interesting chapter in brilliant diagnostic work in New York. Puzzling cases of fever were noted in hospitals, cases which had been set down as typhoid fever and then for a time were thought to be possibly paratyphoid, but, which on careful study, proved to be neither. A peculiar rash was often observed on the body of such patients. Dr. N. E. Brill called particular attention to them, and a committee was appointed to observe a series of cases to decide whether we were in the presence of a new disease or not. The name Brill's disease was even suggested for this. The result was eventually the discovery that cases of mild typhus fever were occurring in the city and that the suspicious cases under observation were of this nature. The whole incident made it much easier to understand the confusion in the minds of even good clinicians at the beginning of the nineteenth century with regard to typhus fever and the typhoid group, a confusion which for a time had seemed almost unwarranted.

CHOLERA

Asiatic cholera began to come to this country early in the nineteenth century, though it is probable that some cases of it had occurred during the seventeenth century in connection with the shipping of the port of New York, but it did not spread through the water supply in such a way as to produce an epidemic. There were rather severe epidemics in 1817 and 1818, and a notable one in 1832. In 1848 the severest epidemic of cholera that this country ever suffered from, entered through the port of New Orleans, brought by immigrants from Havre, and for the next seven years the disease was practically endemic in this country. New York suffered rather severely during the fifties. In 1866 the disease was introduced into New York from Havre and became epidemic. In 1892, at the time of the severe cholera epidemic in Hamburg, there was a cholera scare in New York, but in spite of the danger our quarantine regulations were quite thor-

ough enough to prevent any spread of the disease, and though a number of cases came into port none occurred on land. It led to the establishment of laboratories for the Health Department. Epidemics have often been blessings in disguise in awakening the public to sanitary needs. This experience with cholera as well as the prevention of the spread of bubonic plague in the early years of the twentieth century, in spite of its being for so long in the trade routes of the world, has made it clear that the danger from the older epidemic diseases is at an end forever. Only for our recent disturbing experience with poliomyelitis and influenza, serious epidemics might have seemed a thing of the past.

In the cholera epidemic of 1832, the record office in the Park, being vacant because of the hurried removal of city offices to Greenwich, was converted into a hospital in which some 2,000 cases were treated and 850 died. At Bellevue there developed or were admitted 555 cases, of whom 300 died. Altogether there were 5,835 cases and 2,893 died. The first case of this epidemic as of preceding epidemics of cholera and many other epidemics of severe contagious disease occurred in what was known as "the Five Points" district. Each time that an epidemic came, some temporary cleansing under the authority of the Board of Health would be effected and then the neighborhood would be allowed to slip back almost into its old condition until another epidemic disturbed the equanimity of the city Fathers, though usually not until the citizens had been very much disturbed and manifested their disturbance by emphatic complaints. "The Five Points" continued to be a hotbed of disease and a fomentor of epidemics until well on toward the end of the nineteenth century. The locality constantly recurs in the Board of Health reports until following the house to house investigations in connection with tuberculosis in the early nineties, a large part of this district was razed and now constitutes "Mulberry Bend Park."

There is a vivid account of the cholera epidemic which occurred in New York in 1849 in a publication by the Board of Health, "Report of the Proceedings of the Sanitary Committee of the Board of Health in relation to the cholera as it prevailed in New York in 1849" (New York, McSpedon & Baker, Printers to the Common Council, 1849). The first case was discovered on the 14th of May in a house in "the Five Points," which is declared to be a most unsanitary district. It enjoyed this bad eminence for

nearly half a century longer. Within four days after the first case, seven cases had been reported and a house in the neighborhood was taken for a hospital. Cases multiplied so rapidly that within a week Monroe Hall at the corner of Center and Pearl streets was converted into a hospital. In June the school houses were commandeered for hospital purposes, the school term being declared closed. The cases were about equally divided between males and females. There were nearly a thousand cases of the disease and over fifty per cent. died.

Some idea of the virulence of the disease in these epidemics, even well on into the second half of the nineteenth century, can be secured from Dr. Emmet's Recollections. After serving for three years and a half as Resident Physician, Dr. Emmet was appointed Visiting Physician to the Emigrant Refuge Hospital early in the summer of 1854. The youngest of the Visiting Physicians had the charge, according to custom, of an emergency ward which had to be opened and visited in addition to his regular work. Dr. Emmet thus became responsible for a cholera ward where during the six weeks' service 800 cholera cases were admitted. These were generally in a state of collapse on admission, as the greater portion were picked up in the slums of the city. The fearful mortality among these patients will perhaps be best appreciated from the fact that on two occasions when a larger number of bad cases than usual had been admitted, Dr. Emmet found the next morning *that all the patients and all the nurses* in his department had died during the night. This mortality was, of course, due to the fact that the patients were in very bad condition when brought in. The male attendants employed in the cholera wards were also in a lowered state of resistive vitality for other reasons. They were given good wages in order to tempt them to stay, and they had the old-fashioned foolish persuasion that stimulants would preserve them from the disease, so they were almost constantly under the influence of liquor, and this seemed, as might be expected, to make their cases rapidly fatal once they became infected with the disease.

Dr. Emmet's successor as Visiting Physician in charge of the wards died within a week, though the mortality among physicians was not high, and this was the only death from cholera in the Visiting Staff of the Emigrant Refuge Hospital during this epidemic.

MALARIA

All the northern cities suffered rather severely from malaria whenever they were surrounded by swampy ground or whenever stagnant water was allowed to collect. At one time it is said that there was question of abandoning the site of Philadelphia because the inhabitants suffered so much from malaria and yellow fever. Here in New York in the older time, malaria was not merely a name for tired feelings and any obscure febrile condition, though, of course, many such erroneous designations were made, but it was real "chills and fever," due to the Laveran parasite. Above all, in the second half of the century when the streets to the north of Fifty-ninth street were graded and many of them elevated above the blocks which they bounded, stagnant water collected in large quantities and gave rise to a plague of mosquitoes and to a great deal of malaria. At times still a few cases originate in Manhattan from stagnant water on the roofs and from stagnant pools in Central Park, but the epidemic character of the disease has disappeared entirely.

INFLUENZA

Influenza began to be epidemic in America very early, though of course that name was used for a variety of diseases. The first definite account of an affection resembling what we now call influenza comes from William Currie, who was in this country for a while and then returned to Edinburgh. In the chapter on "Some Prize Essays" a good idea of his very thorough powers of clinical observation is given. He says that the disease known in Europe as influenza, by which is meant a contagious catarrh, made its appearance in North America in 1789.⁴ It was probably conveyed here from Europe, though that idea was not generally accepted at that time, for the disease appeared first in New York in the spring and summer, the first cases being noted in Philadelphia at the end of September. Its appearance there was coincident with the annual meeting of the Friends, by some of whom Dr. Currie considered that it was brought from New York.

The affection became pandemic throughout the country, for

⁴The first epidemic of influenza in North America probably occurred in 1647. It affected mainly the West Indies and was so severe that 6,000 people are said to have died from it in the Barbadoes and St. Kitts.

from Philadelphia it spread to all the Southern States in the course of a few weeks. Currie was not able to ascertain, however, whether it had spread to the Spanish and French settlements on the Mississippi or affected any of the Indian tribes. The popular theory was from the rapidity of its progress and the universality of its sway that its cause was blended with or suspended in the air and conveyed by the wind. Dr. Currie, however, was of the opinion that the disease was a true contagion spread by actual contact.

This first epidemic of Influenza seems to have been reasonably mild, especially in the Northern States, and it proved fatal to none except a few very infirm or phthisical patients, though in the Southern states it was more mortal. The description of the disease is classical. Early symptoms, lassitude, debility and chilliness, succeeded by feverish heat, oppression about the præcordia, sense of fulness and pain in the fore part of the head and in the thorax, later also in the back, together with a teasing cough and a discharge of a thin acrid fluid from the bronchi and nostrils. Occasionally there were gastro-intestinal symptoms, and sometimes there was a pneumonia complication, but these cases were not very common. The subsequent weakness and languor is noted, though we might very well think this due to the rather vigorous treatment. Currie did not believe much in venesection except in very severe cases, but he gave antimonials and mild emetics with moderate doses of opium as the most certain remedy for the cough.

Nearly twenty years later, in 1807, there was another epidemic of influenza which also seems to have had a focus in New York, of which there was some suspicion that it was the starting point in this country. This was coincident with a catarrhal disease which appeared among the domestic animals and was thought to be associated directly with the human affection. Since that time there have been at intervals severe epidemics of influenza, most of them evidently imported from Europe and usually entering by the port of New York, until the world epidemic of 1889, since when the disease seems to be endemic in this country. The epidemic of 1918-19 proves that the virulence of the germ may be renewed from time to time, probably by the introduction of a fresh strain from the Orient.

POLIOMYELITIS

With the development of quarantine and the gradual securing of control over the great epidemic diseases of the past, typhus, cholera, and above all bubonic plague which, in spite of raging virulently in the East for many years and finding its way into many ports in the West, did not succeed in gaining a foothold anywhere in civilized countries in the later nineteenth century, the danger from great epidemics seemed to be at an end. The epidemic children's diseases still continued to be somewhat disturbing pathological factors, but diphtheria had been shorn of its power and small pox had been made a negligible quantity in mortality lists. It looked as though the twentieth century history of medicine was to be little affected by epidemic disease when during the first decade poliomyelitis began to become an important factor of epidemic character.

The disease had been first described by Heine in 1840, but at the beginning of the last quarter of the nineteenth century was so rare that only a few physicians had seen cases, and only those who paid special attention to the affection were able to recognize it with any assurance. A series of epidemics occurred throughout the country, mainly in country places, during the last decade of the nineteenth century, and with the beginning of the twentieth century it was recognized by sanitarians that here was a new and serious danger, especially for children.

In 1907 New York had the experience of the first epidemic which occurred in any of the larger cities. We were so little prepared for its coming that the presence of an epidemic was not recognized until after it was over, when the number of patients applying for relief from the paralysis incident to the disease led to a retracing of the history of their affection and so brought out the fact that there had been many hundreds of cases in the city. Altogether some eight hundred cases were actually traced. The committee who investigated the conditions concluded, however, that there had probably been over 2,000 and perhaps 2,500 cases altogether during the epidemic. It had its focus in and around New York, the neighboring area of Long Island, and in Westchester, but there were a large number of cases in towns along the lower part of the Hudson river, at Yonkers, Hastings, Nyack, Tarrytown, Ossining, Haverstraw, West Point, Newburgh,

Milton, Marlboro and Poughkeepsie. No cases were traced farther north than Poughkeepsie, however, though a careful investigation was made.

Nine years later a much more serious epidemic of poliomyelitis visited the city. The disease had continued to exist in New York after the epidemic of 1907, but attracted so little attention that until 1912 the cases were not even separated from the general group of "other diseases of the nervous system." In the years 1912-13-14-15 there were respectively 70, 54, 34 and 13 deaths from the disease. In 1916, up to June 1st, there were only six deaths. The average weekly number of deaths during the ten weeks from July 1st to September 9th, 1916, was 209. The disease had been gradually becoming more frequent throughout the United States during the early years of this decade, and over 5,000 deaths from poliomyelitis are recorded by the United States Census Bureau as having occurred in the registration area in the five year period 1910 to 1914. The monograph of the Department of Health on "The Epidemic of Poliomyelitis" (New York, 1917), suggests that a conservative estimate would place the probable number of cases during these five years in the registration area as 30,000. This area embraces all those States and cities whose vital statistics are regarded as sufficiently complete and accurate to warrant tabulation by the census office. In 1916 this area had a population of slightly more than seventy-one and a half million.

The reporting of poliomyelitis was not required in New York until November, 1912. In the following years the disease varied in intensity, but seemed to be gradually reducing in virulence and epidemicity until just before the outbreak of the great epidemic of 1916. In 1911 there were 358 cases, more than three-fourths of them in the second half of the year. In 1912 there were 504 cases, distributed over the various months of the year rather irregularly. The first four months had nearly 150 cases. In 1913 there were 300 cases, most of them in July, August, September and October. In 1914 there were 129 cases, most of them in August, September and October. In 1915 there were but 100 cases, with the special incidence once more in the fall months. In the first five months of 1916, when experience with the disease had made the great majority of physicians much better capable of recognizing it than before, only seventeen cases of the disease were reported, eight in Manhattan, four in the Bronx, five in

Brooklyn and none in Queens and Richmond. From June to December there occurred 8,914 cases in New York City, slightly more than 5,000 males and somewhat less than 4,000 females. Of these only 108 were colored, 61 males and 47 females, though the colored race is usually said to be more susceptible to diseases of the nervous system. It had been noted in New York's previous epidemic in 1907 that only two cases in colored children were traced out of probably thousands of cases of the disease.

Brooklyn suffered the most in this epidemic, with 4,265 cases, and Queens the most in proportion to its population with 1,120 cases. The mortality of the epidemic was very high, nearly twenty-seven per cent. The total deaths were 2,406. Of these 1,408 were males and 198 females. The most careful study revealed nothing that would be helpful to the understanding of the epidemic. The disease did not occur epidemically in families, and as in the preceding epidemic nine years before, only rarely was more than one child in a family attacked, even when there were a number of young children. Milk was suspected as a carrier, but no data to support the idea could be found. Quite a number of babies fed exclusively on breast milk suffered from the disease. Flies were thought to be carriers of the disease and other insects were suspected, but nothing was found to confirm this hypothesis. In a word, we were nearly as much in the dark with regard to the conditions of epidemicity of the disease even a year after its occurrence as we had been before. It was feared it might recur in 1917, but it did not.



CHAPTER VIII

MEDICAL PROBLEMS OF THE EARLY NINETEENTH CENTURY—SOME PRIZE ESSAYS

IT would be very easy to assume that there could not be much of serious interest in the practical medicine of the first half of the nineteenth century except perhaps for the professional student of the history of medicine. Only a little study of some of the more serious contributions to medical literature here in America at this time is needed, however, to make it clear that our American colleagues of a century ago were occupied to a great extent with the same problems that we face at the present time. The surprise is to find that their solutions of these problems not only were not, as might possibly be expected, utterly negligible, or, even to our point of view, trivial, because presumedly the advance of medicine in recent years has carried us far beyond any thoughts they could have had, but that on the contrary they anticipated many of the conclusions and practices of the best medical science of our time.

This is very well illustrated briefly by a reference to the essays for which prizes were conferred by the New York State Medical Society shortly after the end of the first quarter of the nineteenth century. Fortunately, some of these have been preserved for us in the early *Transactions* of the Society, where they may be readily consulted. These essays are on such important subjects as "Tuberculosis, its Remote and Proximate Causes"; "The Causes and Treatment of Typhus Fever," when under the word typhus was also included what we now know as typhoid; "The Therapeutics of Iodine"; "The Treatment of Delirium Tremens"; and "The Influence of Trades and Occupations on the Production of Disease" in this country.

At the very first meeting of the Medical Society of the State of New York it was determined that prizes should be offered in order to encourage medical research. This was in 1807. We have no means of knowing whether prizes were awarded in the im-

mediately following years, for the first prize essay preserved for us is the one to which the prize for the year 1825 was adjudged. At their establishment the prizes, which consisted of a medal of the value of fifty dollars and two medals of the value of twenty-five dollars, were awarded only for papers relating to medical problems in which New York State was particularly interested. Two of the prize medals were to be given for the best dissertation on "The Topography, Geology and Mineralogy of any County of the State, together with an account of the prevalent diseases in such county." There was a very definite tendency in the medicine of the end of the eighteenth and the beginning of the nineteenth centuries to connect the diseases of a locality with certain aspects of nature in the region. The prize was evidently announced for the purpose of securing data for the confirmation of this theory.¹

The third prize of the State Medical Society was to be awarded for the best dissertation on the causes and best method of preventing and of curing "the *typhus mitior* or low nervous fever which prevails in the different counties of the State." By this

¹During the first half of the nineteenth century New York medicine kept rather closely in touch with English, Irish and Scotch medicine, and some magnificent work was being done in these countries at this time. In medicine the work of Bright revolutionized our knowledge of diseases of the kidneys about the middle of this half century. Addison's description of the disease since known as Addison's disease, as well as his description of pernicious anemia twenty years before Biermer, show that the finest clinical observation was at work. Parkinson described the disease known by his name in 1817, and Hodgkin his disease in 1832. Hodgson wrote the description of aneurysmal dilatation of the aortal arch which French writers are disposed to call after his name as early as 1815. Wells, who had been born in this country but was a Tory in the Revolutionary period and preferred to be a British subject, described the albuminous urine of dropsy in 1811, and published what is usually considered to be the earliest clinical report on the cardiac complications of rheumatism in 1810.

What is known as the Irish School of Medicine, the leaders of which were Graves, and Stokes and Corrigan, with whom should be associated the name of John Cheyne, deeply influenced the thinking of this period as regards diseases of the lungs and heart, while in France the work of Laënnec and of Louis aroused many young Americans to thoughtful consideration of the medical problems of the individual patient. It only needs a little knowledge of the thoroughly practical steps which were being taken in clinical medicine over in Europe to appreciate why the writers of prize essays at this time who were at all in touch with foreign medical literature, would be likely to write essays containing medical views, observations and conclusions that would not be for the moment merely, but would continue to be significant for long afterwards and even down to our own time.

term is meant typhoid fever as we know it now, though at this time this had not been separated definitely from true typhus. The great European clinicians had not yet differentiated the two diseases, and yet clearly there was a suspicion already becoming prevalent that the milder disease so widespread in its contagion and so apt to make its appearance in the country at a distance from seaports (for typhoid has ever been a rural disease) was entirely distinct from the severe affection so common at that time on shipboard and in seaboard towns, as well as in the jails and poorhouses of large cities and in the crowded slums of manufacturing quarters.

Probably the reason why we have none of the prize essays for earlier years preserved for us, and no record of prizes having been awarded, is that these subjects proved too narrow for good work. The theory of the relation of disease to regional characteristics has often proved taking, but has never been confirmed and was gradually given up. Busy country practitioners probably did not have the time to study the typhoid fever cases under their care in the midst of their long rides to make visits to their patients, and so no noteworthy contribution to either of these subjects was made.

It is not until the fifth meeting of the Society that we have definite information as to the awarding of the first prize, as follows:

"Prize medal: The Prize medal for 'The Best Dissertation on Topography, Geology, Mineralogy and Medical History of any County in The State of New York' was adjudged to Dr. Stearns of Saratoga." This is, of course, the Dr. John Stearns who was so prominent in the early days of the New York State Medical Society, who afterwards taught medicine at Fairfield Medical College, and who subsequently, transferring his practice to New York City, came to be the first President of the New York Academy of Medicine.

There are only passing references to any further awarding of prizes after that to Dr. Stearns, until 1825, when the prize essay for that year, that of Dr. Andrew Hammersley, entitled "A Dissertation on the Remote and Proximate Causes of Phthisis Pulmonalis," is published in "The Transactions of The Medical Society of The State of New York," vol. II, 1834-35. After this there are a number of these prize essays preserved through publication in the *Transactions*, and they represent a rather strik-

ing contribution to our knowledge of medical science in so far as it was developed then, and of the medical theory and medical practice of that time. Indeed there are probably no documents extant that give us so good an idea of the subjects generally discussed in medical society meetings at this period.

It is perhaps not too much to say that most of the physicians of our time would be quite sure that the prize essays of a hundred years ago would have little more than medical historical interest, and above all that they would represent some very crude notions with regard to disease prevention and the proper appreciation of disease causation as compared to our time. The surprise, therefore, is to find that the subjects treated are exactly those which are still occupying us in our medical society meetings at the present day, and that they are treated from very nearly the same point of view as we treat them at the present time. Indeed, as we shall see, the writers anticipate many of the distinctly scientific medical opinions that we are much inclined to think of as quite modern. Dr. Hammersley's essay on Phthisis is a typical illustration of this rather surprising fact and even a few quotations will serve to demonstrate it very clearly.

Dr. Hammersley begins by discussing and rejecting the popular idea that consumption is due to cold, or that indeed cold is a source of the many ills that are attributed to it. When we recall that even at the present time this is a popularly accepted notion, Dr. Hammersley's paragraphs are interesting:

Popular prejudice has all along conduced to the belief that sudden exposure to cold, when the body is heated, would be attended with extreme hazard, and this alone has been accounted one of the fruitful sources of disease. The researches, however, of modern experimenters has tended in no small degree to qualify such conclusions.

Those of Dr. George Fordyce and Sir Charles Blagden, familiar to every person, are among the most important in evincing that exposure to a high degree of cold, after violent heat, is unattended with danger to the constitution. This fact is likewise confirmed by the mode in which the practice of bathing is conducted in Russia, and in several other countries, the inhabitants of which, to heighten the luxury and add to the refreshment of immersion in heated baths, or long exposure to vapor of high temperature, immediately plunge into contiguous cold baths, or run into the open air and without the smallest covering on their bodies roll themselves in snow. In considering a fact of this kind, there are two particular circumstances to be noticed, to wit, the acquired vigor of the subject to whom the practice appertains and the inherent powers of reaction pos-

sessed by the animal economy. The hardy Russian, whose every fiber is made tense by the severity of his climate, suffers no harm from such practices, as the principle possessed by the system just adverted to is put in action in a frame capable of enduring the influence of the opposite medium to which it is exposed.

On the other hand, Dr. Hammersley is very certain that dust has a great deal to do with the development of tuberculosis, and he points out that it is particularly workmen whose occupations keep them in a dust-laden atmosphere and especially whose trades involve the making of much dust who are most likely to suffer from it. He says:

Among the various artisans Dr. Cullen has enumerated stone-cutters, millers and flax-dressers as particularly subject to attacks of this disease. "But the most striking example," says another writer, "of this species of injury is afforded by one of the processes of the needle manufactory; it is that of dry grinding by which the needles are pointed; the persons employed in this labor are universally affected in a short time with the symptoms of approaching consumption. They go on coughing till they either spit blood or a thick substance having the appearance of matter. They decline in flesh and strength and scarcely ever survive to the fortieth year. Dr. Kirkland observes that scythe-grinders are subject to a disease of the lungs from particles of sand mixed with iron dust (getting into the lungs and setting up an infection) which among themselves they call the grinder's rot." It is moreover asserted on good authority that the filers of London die almost universally at a very early period of a similar disease. Certain other occupations are very properly thought to bestow an immunity from this extensive malady. Such are those of boatmen, watermen, sailors and gardeners. Certain animals of the lower order are moreover supposed to enjoy a marked exemption, as dogs; while on the other hand, cows, it is reported, are particularly subject to it.

In the last sentences he dwells on the fact that people who live in the outdoor air have an immunity to the disease to a considerable extent, and he discusses animal tuberculosis much in the same way that we were discussing it after Koch's announcement with regard to bovine tuberculosis at the beginning of the twentieth century.

After tuberculosis with its death rate of probably one in seven of all the deaths at that time, the most important disease for the physicians of the first half of the nineteenth century in New York was typhoid fever. It caused severe ravages in the city, especially in the spring and in the fall, and was endemic in the

country during most of the year. It seems particularly appropriate then that the second prize essay which has been preserved for us in the "Transactions of the Medical Society of the State of New York" (1834-35) is on this disease. It was awarded the annual prize for the year 1828. Owing, as has been already noted, to the confusion still existing between typhus and typhoid, the title of the paper was "An Essay on The History, Causes and Treatment of Typhus Fever," and it was presented in competition by Dr. Alfred Y. Magill, of Winchester, Virginia.

The prizes as originally announced by the State Medical Society had manifestly contemplated the restriction of the competition almost, if not quite, exclusively to physicians of New York State. A more liberal spirit replaced that narrowness, however, and the prize for the second essay crowned by the society which has been preserved for us, thus goes to a Virginian. The award was made very probably about 1827. The essay may be found in the "Transactions of the Medical Society of The State of New York" for 1834-35. At that time the differentiation between typhoid fever and typhus fever, as we now know them, had not been entirely made. A continued fever with abdominal symptoms was called typhus, as indeed European physicians still talk of true typhoid as *typhus abdominalis*. What is to be found then in the essay of Dr. Alfred Y. Magill, of Winchester, Virginia, who was the winner of the prize, is an account of what we know as typhoid fever.

It might be expected that what would be enduringly interesting in this essay on typhoid fever would be some considerations with regard to its history and causes. It is, however, the reflections on treatment that are still of significance and probably always will be. In spite of the fact that the cold water treatment of typhoid is usually considered to be of much more recent origin, we find it very fully discussed in this essay. It is true that this represented only quotations from Dr. James Currie's (1756-1805) experiences with cold water in the reduction of fever. These have all the more interest for us, however, from the fact that though Currie was a Scotch physician he had spent some time in New York during and after the Revolution. With the separation of the colonies from the Mother Country, however, he settled down as a medical practitioner in Liverpool where he built up a very large practice. Perhaps his attention was called to typhoid in America, but however that may be, it is easy to understand that

in so busy a port as Liverpool, with sailors from all over the world, there would be many carriers of typhoid fever almost constantly scattering the seeds of the disease, and so Currie had abundant opportunities to treat cases. Long before Brand of Stettin, Currie used cold baths for the reduction of fever, but also advocated the use of cold air for the same purpose, insisting that these refrigerants not only lessened the temperature, but moderated the pulse, quieted the patient's restlessness and usually soothed him to quiet restful sleep.

When it is recalled that ordinarily at this time and indeed for long after, it was the custom not only not to put cold water on a fever patient externally, but no matter what the fever, he was even, as a rule, refused a drink of cold water, his room to as great an extent as possible being kept hermetically sealed, it is easy to understand what a revolution in therapeutics Currie was advocating. Even in tuberculosis, the slightest breath of fresh air that would cause the patient to shiver was considered to be giving him a fresh "cold." It is all the more wonder then to find this prize essayist of 1828 quoting Currie's recommendations and citing his clinical results as the best possible reason for repeating his mode of treatment. It is perhaps even more surprising that the prize committee of the Medical Society of the State of New York should have awarded the prize to the essay advocating such methods. Had the majority of the physicians of this period possessed the same openness of mind as the prize committee of the New York State Medical Society, the profession would not have had to wait for full two generations until the German Dr. Brand of Stettin rehabilitated Currie's bath treatment of typhoid fever.

One need only read some of the passages from Dr. Magill's prize essay to understand why Dr. S. Weir Mitchell found absolute genius in Currie's book which, unfortunately, as Garrison remarks in his "History of Medicine," like the clinical advances of Floyer and Martine, was neglected and practically forgotten.

Perhaps even more interesting than the use of cold water for the reduction of fever is the suggestion that when water was not available or was contra-indicated for any reason, the patient should be put in the cold air until a definite reduction of temperature was secured. The opening of a window directly in the face of a cold northwest wind would remind one of some of the venturesome

proceedings of physicians especially in hospital work in recent years. Dr. Magill said:

No one can peruse Dr. Currie's recent experience in this matter without being convinced that cold water when properly applied is a most important remedy in case of fever. Its utility is not confined to typhus; it is equally serviceable in all fevers attended with increase of heat and arterial action. Its effect on the pulse is astonishing in many cases. We have often known the mere bathing of the hands and arms of a febrile patient to reduce the action of the pulse from ten to fifteen beats in the minute, and if this partial application of cold water has such an effect on the action of the heart, how much greater must be the effect of a cold bath. We have many instances on record of its calming at once the most furious delirium; persons in such a situation have often jumped overboard from a vessel into the sea and been taken up perfectly calm and rational and with an almost complete extinguishment of the fever. With the many strong instances recorded in various works of its remarkable efficacy in curing fever, it is justly a matter of surprise that physicians so seldom call its great powers into requisition. It exercises a more immediate control over the action of the heart than blood-letting. Dr. Currie mentions a striking instance of the effects of cool air in reducing the pulse. "In the month of May, 1801," he says, "I was desired to see a patient ill of fever in Sparling Street. I found him in the tenth or eleventh day of the fever, delirious and restless; the surface of the body dry, and his heat 104 F. The room was close and I desired the only window in it opened. The wind from the northwest blew directly into this window, and the bed being situated between it and the chimney, a pretty brisk stream of air passed over it. The patient had just thrown off a considerable part of his bedclothes and was exposed naked to the breeze. I sat by him with my finger on his pulse watching the effect. In a little time the pulse fell from 120 to 114 in the minute; he became more tranquil and soon afterward he sank into a quiet sleep, in which he remained when the water for effusion was prepared; of course we did not disturb him; he remained exposed to this cold air until morning when his pulse was found to be about 100 and his heat 101."

It is interesting to note that though the clinical thermometer was not regularly used for fifty years after the date of this observation (indeed, Keen says that surgeons during the Civil War estimated fever by touch and not by the thermometer), this English observer quoted by an American prize essayist was studying his fever cases very carefully with the aid of a Fahrenheit thermometer in the early years of the nineteenth century.

While all patients suffering with fever were to have their temperature reduced by some direct use of cold air or water, he did

not think that patients should be subjected to cold applications on general principles, but advised the careful selection of patients and laid down certain contra-indications to this method of treatment. The whole discussion is interestingly up-to-date in many ways and deserves a place in our literature. He said:

But cold water is by no means to be used indiscriminately in every case of fever; neither is it to be used in all stages of any fever; the rules which Currie has laid down on this subject are excellent and cannot be followed too closely. If we obey strictly his directions, we will always be prevented from misapplying or doing injury to its use. He gives separate rules for the external and internal use of cold water, but as its effect, except in degree, is the same when used either way, one set of rules will answer as a guide for both. His first general rule is that "it may be used (either internally or externally) when there is no sense of chilliness present, when the heat of the surface is steadily above what is natural, and when there is no general or profuse perspiration." We will now give the substance of the particular rules he has laid down on this subject: 1. Cold water is not to be used either internally or externally in the cold stage of the paroxysm of the fever, however urgent the thirst; taken at such times it increases the chilliness and produces great weakness of the pulse, and if used to any extent might cause the death of the patient. 2. When the hot stage is fairly formed and the surface is dry and burning, cold water may be used both ways with the utmost freedom; frequent draughts of cold liquid and its external application, under such circumstances, are highly grateful; they diminish very much the heat of the body and lessen considerably the volume and frequency of the pulse. 3. It is also necessary to abstain from the use of cold water when the body is under profuse perspiration, and this caution is more important in proportion to the continuance of this perspiration.

The third of the prize essays published had for its subject "The History, Preparation and Therapeutic Uses of Iodine," and was presented by Samuel J. Hobson, M.D., a member of the Philadelphia County Medical Society. This third award, the second that went to a physician who was not a New Yorker, shows that there was absolutely no *chauvinism* in the prize committee's consideration of essays. This third essay will be found in the "Transactions of the Medical Society of the State of New York," Volume II, 1834-35.

Those who think that at the present time we have any new or recent suggestions with regard to the therapeutic value of iodine or its combinations, should read this essay. There is, of course,

scarcely any pathological condition in any important organ that has not been apparently benefited by iodine, in the hands of some investigator. Even as early as 1830, however, it was true that symptoms of all forms of chronic disease were at least relieved by iodine or its compounds. The list of diseases given by Dr. Hobson includes such terms as scrofula, enlargement of the mammary glands, of the liver and spleen, of the testicles, marasmus or disease of the mesenteric glands, all the various forms of tuberculosis in all parts of the body, and nearly everything else, from varicose veins to diseased heart and angina pectoris, and polysarcia or corpulence, and the non-union of fractures.

It was especially recommended for enlargements of the various glands that are possessed, as we have since learned, of an internal secretion, as the prostate, the thymus, the thyroid. The enlargement of the thymus gland, for which it is supposed to be especially useful, is that which by its sudden acute effects produces serious dyspnea or even convulsions, so-called thymic asthma which may result in sudden death, an affection that is often thought to be of much more recent observation. It was with regard to enlargements of the thyroid, however, that the most important field of iodine in therapeutics was found. Dr. Hobson's discussion of this will be of interest even to the modern therapist. As this illustrative case is associated with a special use of the electric current, not very unlike that known in more recent times as *kataphoresis*, the whole passage is quoted.

Bronchocele, or Goitre. Such unparalleled powers has iodine displayed in this disease that it has received, by almost universal consent, the title of specific.

We do not conceive it necessary to select any from among the numerous cases, except one, which have been reported as illustrative of the successful employment of iodine in this disease, as its efficacy is too well known.

The case we are about to mention is one related by Dr. Coster and was cured in a singular and most ingenious manner—by combining the action of the Voltaic Pile with that of iodine.

A young man had a goitre of large size which had resisted the use of iodine both internally and by friction. Being aware that iodine was attracted by the positive pole, Dr. C. thought it probable that by applying iodine on one side of the tumor and the pole to the other, its absorption would be accelerated; the result was highly confirmatory. He performed the operation twice a day, taking care to change sides at each time of its operation, i. e., in the morning he would rub the ointment on

the right side of the tumor and apply the pole to the left; and in the evening *vice versa*. He kept the tumor under its influence for ten or twelve minutes, and in the space of twenty days it was entirely removed. To show that its effect was not solely owing to the pile he had previously subjected the tumor to a galvanic current without the least sensible effect. He used the pure iodine ointment made in the proportion of two grains to a scruple of lard. It was the only case in which he ever adopted the above plan of treatment, but recommends physicians to give it a trial in all obstinate cases of the disease and also of scrofula.

When used in the ordinary way we direct together with the internal use; in bad cases, frictions twice or thrice a day on the tumor, with the ointment either of iodine or hydriodate of potash; it should be rubbed with a portion about the size of a hazel-nut or more until the unguent is absorbed. There is frequently a little hard, knotty lump that remains after the goitre is dissipated which is often difficult and sometimes impossible to remove. Mr. Austin, of England, is in the habit of using strongly camphorated mercurial ointment for its removal. The use of iodine ought never to be imprudently persevered in on account of it.

Some of the notes to the essay on iodine contain some curious observations made with regard to the effect of this substance on the sexual sphere, especially as regards the mammæ and testicles. These observations have not been entirely confirmed, yet there has always remained a persistent tradition with regard to the influence of iodine on such glandular structure when used for prolonged periods.

This last effect (that of causing reduction in size of sex organs) has more than once been observed; and from merely remedial doses. Professor Hufeland says he has seen three cases where the mammæ disappeared during its use for disease.—*Amer. Med. Record*, vol. VIII, p. 624.

It is also said that men have been castrated, if I may so speak, from the use of iodine. Such events are apt to create an aversion to the remedy; but they are of extremely rare occurrence and generally proceed from its protracted or injudicious use.

These facts demonstrate, however, its potent sway over the absorbent and glandular systems. But what remedy is there whose action is not influenced by temperament or idiosyncrasy?

Dr. Hobson's directions as to the dosage and methods of administering the various preparations of iodine show how far advances had been made in the direction of the most modern thought at a time when this substance and its compounds were as yet scarcely more than a quarter of a century before the medical profession.

With regard to the administration of iodine, we should observe the same general rules with it as with every other active medicine;—to commence with minute doses, and gradually increase it:—to watch its effects:—to attend to the age, temperament and immediate condition of the patient:—to suspend it on the manifestation of any untoward symptom, . . . Of the tincture of iodine and the solution of hydriodate of potassium, we should commence with six drops of either to an adult three times a day, about two hours after each meal, and to be cautiously augmented, say, another drop every other day until we reach to the amount of twenty drops thrice a day; it may, however, by continuance, be gradually increased with safety to 25 to 30, and even to 40 drops, thrice a day; at least we know that practitioners have occasionally increased the dose to that amount with impunity. At page 247 we mentioned cases where enormous doses were taken daily with no bad effect.

Our reason for advising it to be taken some time after eating is that then it would be less apt to produce nausea, an effect frequently complained of by patients under its use. Of the two the solut. potass. hydriod. is found by experience to be far less liable to disagree with the stomach than the tincture of iodine, and hence it is more generally employed especially in private practice, and should always be in delicate females. We may administer either of them in a wine glass full or more of pure or sweetened water with a few drops of tincture of lavender, cinnamon or mint to render it more agreeable. As the tincture of iodine possesses a very unpleasant taste and smell, it would be perhaps most palatable if taken in some of the aromatic syrups. Coindet always exhibited it in capillaire syrup. The solut. potas. hydriod. has no taste whatever.

Some may think that the dose we have recommended to begin with is unnecessarily small, but we are convinced from what we have read that too many practitioners are in the habit of commencing with injuriously large doses, hence we so often hear of their having to suspend it from its inducing nausea, headache, febrile excitement, etc. It is moreover a false notion that we can hasten the cure or obtain more good from medicines of this kind by giving them in large doses; we may indeed obtain their poisonous effects, but not their specific constitutional sanative influence, if I may so speak.

The closing sentences of these directions have, in other words, often been re-echoed since Dr. Hobson's time, and the thorough-going conservatism of his position is all the more remarkable as it is evident from his essay that he was an enthusiast on the subject of iodine.

The fourth of the prize essays of the New York State Medical Society was on the subject of Delirium Tremens. It is possibly a curiously interesting reflection on the importance which the subject had at that time that this was the first one of the prize essays published, the others that we have referred to in this chap-

ter being printed in subsequent volumes of the "Transactions of the State Medical Society," though the awards were made to them before this. Beer and wine were very little taken and strong drink was consumed in considerable quantities. Even in staid New England many a hogshead of Jamaica rum was imported not merely for the commercial profit in selling it to the rest of the country, but for the direct use of it in the towns where it was landed. All the country took much more strong drink on the average than now; it is not a matter of surprise, however, to find that the prize essay on Delirium Tremens was written by Dr. James Conquest Cross, of Kentucky, for that State already enjoyed the reputation for distilling and three-quarters of a century ago consumed much more of its own product than it does at the present time.

Probably the most interesting feature of Dr. Cross's essay consists of its rather complete review of the literature of this important disease published up to the year 1830. His essay seems to indicate, however, that he had abundant clinical experience which had trained his critical judgment as to the treatment of the condition. He insists emphatically on the absolute necessity for individualization of treatment for different patients, for no system will equal in good effect the careful watching of personal indications; he deprecates the overuse of opium, and discusses venesection as well as various antiphlogistic methods of treatment very much in the temper of a physician of our own day.

Some quotations from Dr. Cross's paper will serve to show how thoroughly conservative he was in the treatment of the disease and how much he recognized the necessity for individualization in the prescription of remedial measures. The sheet anchor was opium, but opium used in conjunction with remedies especially indicated by the patient's individual symptoms.

That the energetic enforcement of the opium practice when the system is in a state of obvious unpreparation or where it is not associated with suitable auxiliaries may force the patient into a state of stupor that will terminate in death is intuitively evident. Independently of every other consideration, this single fact is sufficient to prove how exceedingly preposterous that precept is which recommends the indiscriminate employment of opium. It also enforces the superlative importance and indispensable necessity of attending closely to the effects of this drug as they are in succession developed. With blind and heedless impetuosity to push forward this potent narcotic until sleep is produced without regard to any

other circumstance, I hesitate not to assert to be the quintessence of quackery. This is the more culpable, as it is in the power of the attentive physician with some degree of certainty to determine from the condition of the symptoms that precede sleep, whether opium is making a salutary or prejudicial impression. We lay it down as a rule that if there is not a gradual, although it may be an exceedingly inconsiderable amelioration in the symptoms, the conviction should be indelibly impressed upon the mind of the physician, that he has been premature in the exhibition of opium. Perhaps this remark should be qualified. It will always happen that when a quantity of opium sufficient to overcome the gastric irritation has been given all the symptoms will be exasperated. This conclusion will not, therefore, be authorized unless we have properly prepared the system and are perfectly sure we have given sufficient doses.

His discussion of the value of venesection in delirium tremens gives probably the best idea of his broadminded care to treat the individual suffering from the delirium, rather than the delirium itself. This discussion will serve at the same time to show to what an extent venesection had been carried by some supposedly conservative authorities in the treatment of delirium tremens. The affection is, of course, one of those in which phlebotomy would seem to be indicated. The violence of the symptoms and their reference mainly to brain, would seem to indicate that the circulation must be relieved at almost any cost. It is then interesting to see how modern in this matter was Dr. Cross, and the fact that his essay should be selected by the prize committee of the day indicates the conservative temper of representative members of the New York State Medical Society in the early part of the nineteenth century.

While there are those who proscribe venesection altogether and others who commend it guardedly, there are those who wield the lancet with a boldness not surpassed in the treatment of most inflammatory affections. Thus Professor Potter, whose high pretensions as a sound and successful practitioner have never been questioned, declared that, "in young subjects, and even in patients advanced in life, but recently attacked, we have frequently bled to the amount of 70 or 80 ounces, and several times an hundred in three or four days." In some instances so energetic are the symptoms so indicative of inflammatory action that Professor Frank has been induced to conclude that this disease is a peculiar encephalitis, and consequently in accordance with this view of the subject the treatment is conducted exclusively upon antiphlogistic principles. Here, however, the same error has been committed by Professor Frank that deserves such severe reprehension in those who obstinately maintain that delirium tremens is invariably a disease purely asthenic. A little experience, un-

influenced by preconceived opinions, will soon convince the attentive practitioner that while both these opposing hypotheses are true to a certain extent they are, when designed to embrace all the varieties of this disease, radically unfounded. It is this circumstance which renders the propriety of following their precepts not only questionable, but absolutely dangerous. For if we should embrace the views of those who proscribe the lancet entirely, we should doubtless succeed in some instances, but the experience and success of Professors Potter, Frank, etc., afford conclusive proof that we shall meet occasionally with patients who imperiously require venesection and that must inevitably perish under the narcotic or narcotico-stimulant modes of treatment. An adoption of the pure antiphlogistic treatment of Professor Frank would be followed by a greater mortality as there are fewer cases in which the lancet is admissible than in which it is clearly and incontestably proscribed.

Certainly any one interested in the history of delirium tremens and particularly of its treatment should refer to Dr. Cross's essay, for it undoubtedly contains an immense amount of valuable material. There are hints here and there that already observant physicians were beginning to note organic changes as having taken place within the skull in connection with the long continued abuse of alcohol and that even such conditions as "wet brain" as also pachymeningitis, though the pathology of the affection was of course not understood, were more than suspected by these old-time clinical observers.

The greatest surprise for modern medical readers, however, is probably to be found in the fifth of the Prize Essays crowned by the Medical Society of The State of New York. The subject of this essay was "The Influence of Trades, Professions and Occupations in the United States in the Production of Disease." The prize is awarded to Dr. Benjamin W. McCready of New York who made use of his experience in New York City itself to enable him to describe the many affections that occur in connection with occupations. Occupational disease is often supposed to be a comparatively recent subject of interest and yet Dr. McCready shows a thorough grasp of the subject some three generations ago.

He treats the whole subject, indeed, in what we quite justly would call very modern fashion. He emphasizes above all that it is the general environment, the living conditions as well as trades and occupations, which are productive of diseases. He has described in rather emphatic terms the lodging conditions of the poorer classes at this time in New York City, and suggests that

it would be quite impossible for them to be healthy under the circumstances. The conditions which he described grew worse and not better for a whole generation after he wrote, for his was the prize essay for the year 1837, and the sanitary revolution that cleaned up New York, to some extent at least, did not come until after the Civil War. Dr. McCready said:

The cupidity of landlords has tempted them to build up narrow alleys with small wooden tenements which, costing but little, and being let to numerous families, yield immense profits. The alley is often not more than 6 feet wide, paved with round stones and with very insufficient means for draining off the water. It is not uncommon in such situations to find one or two of the apartments in each house entirely underground. Can we wonder if in such a state of things we find moral as well as physical disease, vice as well as sickness? Can we expect men who live thus to be orderly and sober, or women to be cleanly and domestic? In such situations, during the summer months, diarrhea and dysentery are rife, and among children fatal. Scrofula, in some of its protean forms, is frequently met with and they form the lurking places where small-pox, measles and scarlet fever lie covered under the ashes, or when circumstances are favorable, blaze up into sudden fury.

With this very clear recognition of the serious effect of the insanitary condition of the city due to the graspingness of landlords, it is indeed surprising that reform in this matter should have had to wait for a full generation. When it came then, it was actually forced upon the city by the awful conditions which had developed. With the growth of the population in New York and the great increase of immigration from Europe after the famines in Ireland in the late forties and the revolutions on the Continent in 1848, New York became very thickly populated. As always, the necessity for the workman, in the absence of transportation facilities, to live close to his place of work, created some most thickly inhabited slums, so that it was no wonder that epidemic after epidemic of severe contagious disease spread first among the poor and then, gaining in virulence, attacked also the better-to-do classes. The warning of Dr. McCready's essay might have served to obviate this, but much more serious lessons were needed. Good reasons seldom lead to social or sanitary reform, for that, actual physical suffering and serious loss of life is usually needed.

Dr. McCready took his subject in its widest sense and has some

rather interesting passages therefore with regard to the influence of abuses in the medical profession on the health of the community and the production of disease. He points out emphatically that many of the popular errors in medicine which are now taken advantage of by the quack and the patent medicine manufacturer, are survivals from a previous state of supposed knowledge among physicians themselves. Many medical theories which for a time achieve acceptance and sometimes arouse no little enthusiasm in professional circles afterwards prove to be of no special significance. Not unfrequently these are perpetuated among the general public for at least a generation or two after regular practitioners have given them up. Usually they owe their survival sometimes their revival to those who use them to exploit the public for their own purposes. Virchow and our own Jacobi, as well as many others, have often expressed this idea, that most of the errors of the vulgar in medicine were the results of theories accepted by physicians on inadequate grounds. Dr. McCready's remedy for this unfortunate state of affairs would be the spread of genuine scientific knowledge. Not that he would teach men to be physicians, for it would be quite impossible for the majority of men to give the time even if they had the talent, but his idea was to popularize certain medical scientific principles so as to enable men to judge of newly presented remedies and modes of treatment from a proper scientific standpoint. He was thoroughly conservative in the expression of this opinion, and the common sense with which he urges the benefits to be derived from popular medical education is usually supposed to come much later in American medical history than the year in which this essay was written. He said:

That the present errors of the vulgar were formerly the themes of philosophers, is an old and trite observation. Most of the vague and unfounded notions of the public concerning the nature and treatment of diseases, which embarrass the young practitioner on his entrance into practice, were once the cherished doctrines of the wise and learned. Can we do nothing to correct the evil our predecessors have occasioned? Can we not substitute truth for falsehood, facts and reasoning founded on facts, for idle notions, and injurious hypothesis? I would not wish to instruct the community in a knowledge of the symptoms and treatment of diseases—that were impossible; but I would wish to make a knowledge of the laws and functions of the living body a necessary part of a liberal education, and to communicate to all classes so much information as would

enable them to educate their children and regulate their diet, clothing, exercise and habitations.

Probably the most interesting part of Dr. McCready's prize essay is that in which he reviews the place which nostrums, as he calls them, or quack medicines or patent medicines as we term them, held in the production of disease. He was quite sure that no good and a great deal of harm came from their consumption. He put his finger exactly on the keynote of the situation when he declared that the publicity given such remedies by newspaper advertising was the principal reason why so much of these remedies was consumed. He would have thoroughly agreed with the modern aphorism that the only efficacious ingredient in these medicines was the printer's ink associated with their sale. He pictures in emphatic terms the evil results to be anticipated from the abuse of such medicine, and what he said nearly one hundred years ago medical writers of the present day are insisting on just as vigorously. He said for instance,

There is an evil, which has of late years become of excessive magnitude, and which is daily increasing—the consumption of quack medicines. Aided by the immense circulation of a cheap press, many of these nostrums have obtained a sale that exceeds belief. Few patients among the lower classes now apply to a physician, who have not previously aggravated their complaints by swallowing numbers of these pretended specifics, and a late resident-physician of the city hospital has informed me that he has met with many cases of derangement and irritation of the mucous membrane of the stomach and bowels, caused solely by the drastic articles which enter into their composition. Formed in most instances of irritating ingredients and directed to be taken in immense doses, and as infallible remedies in all cases, the mischief which they do is incalculable, and unless some stop be put to the evil by law or by an enlightened public opinion, it will soon claim an unenviable preeminence as a cause of public ill health.

These five prize essays furnish a very lively picture of practically all the phases of medical science in the twenties and thirties of the nineteenth century. The discussions of the etiology of diseases, curiously enough, are still of enduring significance and, as we can see now, are almost sure to remain so. The startling contradiction of a good deal of modern thought with regard to our supposed rapid progress in the treatment of disease during the past three generations is a bit of history well worth chronicling.

Perhaps it will represent a chastening element in our critical estimate of the past and the present in medicine, to have thus brought before us the best thought of the older time. There were many absurdities in the practice of medicine during this period, but then there are always many absurdities, and the therapeutics of any generation is invariably absurd to the second succeeding generation, and yet there remains a certain substratum of conservative medical practice which bears evidence that the physicians of any time have faced their problems judiciously and worked out some of the best solutions of them, in spite of the lack of scientific knowledge which might seem to make such practical conclusions impossible.



CHAPTER IX

NEW YORK AS A PIONEER IN PROFESSIONAL MOVEMENTS

PERHAPS the most significant chapter in the history of medicine in New York is that which would tell the story of the various movements for the benefit of the medical profession as a whole in this country, which have been initiated in New York. Two of them stand out as important landmarks in professional progress in this country. The first was the establishment of the National Committee on the Pharmacopeia, which brought to a successful conclusion arrangements for the publication of a National Pharmacopeia at the beginning of the third decade of the nineteenth century. The second was the foundation of the American Medical Association, which has meant so much for the professional practice of medicine in this country since the middle of the nineteenth century, and is evidently to mean ever so much more in the present century. The third of the movements for the profession in this country is usually not so well understood. When a code of ethics too detailed to be quite practical, hampered professional progress in this country and inveterated sectarian division, New York's position at the cost for a time of her loss of influence in the American Medical Association brought about reform. These three sets of incidents have a certain historical nexus and are grouped together.

Undoubtedly one of the most important developments for the benefit of medical practice in America was the establishment of the National Committee on the Pharmacopeia, a movement initiated in the Medical Society of The State of New York by Dr. Lyman Spalding. The subject had been broached several times in the annual meetings of the State Society, but finally a communication from the New York County Medical Society on the subject of a national pharmacopeia brought it formally before the State Society at its twelfth annual meeting, February, 1818. The subject was referred to a committee consisting of Drs. Willough

Patrick and Wendell. In its report this committee stated very emphatically the need for a national pharmacopeia, and pointed out how much disadvantage the unsettled conditions involved for patients and even danger to life:

WHEREAS, Much diversity does now prevail in pharmaceutical preparations in the different sections and States of the Union, in consequence of the various pharmacopeias which are adopted—such as Coxe's Dispensatory, the Massachusetts' Medical Society Pharmacopeia, Thatcher's Dispensatory, the New York Hospital Pharmacopeia, the Edinburgh Dispensatory, the London Dispensatory, the London Pharmacopeia, the Dublin Pharmacopeia, and the Parisian Pharmacopeia, etc.—which accounts for a well known fact, that the traveler gets a different preparation, under the same name, in almost every village, town or city in which he may chance to be indisposed. This is not the only evil; for so multifarious are the names of medicines, that a name, which is common in one town, may be unknown in another, or, what is worse, may be applied to a very different medicine.

The committee suggested that a general convention be held in the city of Washington, January 1st, 1820, to be composed of delegates from incorporated State Medical Societies in an incorporated college of physicians and surgeons and such medical schools must form a faculty in any incorporated university or college in the United States. It was proposed that district conventions should be held in different parts of the country as a preliminary to the national meeting. These preliminary meetings were successful, and the National Convention at Washington completed its work with such satisfaction that in his annual address as president of the New York State Society, Dr. John Stearns was able to report the completion of the committee's labors and point with pardonable pride to what they had accomplished. He said:

I trust the time is not remote when the opinions of American physicians will be referred to as the highest authorities in medicine. This event will be accelerated by the liberality of opinion and discussion that is tolerated in our schools, unshackled by the restraints of authority imposed upon the graduates of the colleges of Europe. The late effort to form a national pharmacopeia, is a strong illustration of this position. An effort which has never been equaled, and the magnitude of which intimidated many of its ardent friends; but which our diversified climate, abounding in medicinal plants, alone sufficient for the indigenous diseases of our country, urgently required.

The delegates originally appointed by this society performed the duties

assigned them, in the City of New York, and reported a complete Pharmacopeia to the District Convention of the Middle States, assembled, in June last at Philadelphia. The work executed by this, and the other District Conventions, held at Boston for the Eastern, at Lexington, Ky., for the Western, and at Columbia for the Southern States, was reported to the General Convention of the United States, recently held at Washington. From the whole of which a judicious and satisfactory selection has been made. It is, therefore, with no ordinary satisfaction that I announce the final completion of a work which will constitute a new era in medical history. The benefits will be extended to every practitioner, and perhaps to every individual in the United States. We search the annals of the world in vain for a precedent.

From Maine to Georgia, from the Atlantic to the Mississippi, we behold the medical public, animated by one spirit, merging all private considerations in this grand object, and spontaneously congregating in State, District and General United States Conventions. An intercourse of correspondence, then commenced, has excited the medical energies of America, and will produce important consequences, co-extensive with our empire, and durable as its existence.

THE FOUNDATION OF THE AMERICAN MEDICAL ASSOCIATION

The foundation of the American Medical Association due to the efforts of the Medical Society of The State of New York to bring about a reform in medical education, is really a chapter in the history of medicine in New York State. Medical education had been getting worse in this country instead of better as time went on, because medical colleges had multiplied out of all reason, doubling in number between 1830 and 1845, unhealthy competition for students making the requirements for entrance and graduation ever lower. Sixteen weeks had come to be very generally adopted as the length of the college term, and in some of the schools it was reduced to thirteen. In 1835 the faculty of the Medical College of Georgia proposed a meeting of delegates from the medical colleges of the country, but their proposition fell on deaf ears. The first movement to bring together representatives not only of the medical colleges, but also of the regularly organized medical societies throughout the country, was made in the Medical Society of The State of New York at its annual session in February, 1839, by Dr. John McCall, of Utica.

His resolution to call a convention to consist of three delegates from each State Medical Society and one from each regularly constituted medical school in the United States, to be held in the

year 1840, on the first Tuesday in May, in the city of Philadelphia, was adopted by the New York State Society, but neither the other State Societies nor the medical schools responded to the invitation and no meeting took place. It required five years more of agitation of the subject and education of the profession generally to bring the matter to a head.

At the annual meeting of the New York State Society in 1844, Dr. Nathan S. Davis brought up the subject again, and, unaware of the previous attempt, introduced a resolution proposing a meeting of the delegates from the medical societies and colleges of the whole union, to convene in the city of New York on the first Tuesday in May, 1846. This invitation met with a favorable response except from colleges located in Philadelphia and Boston. The medical journals of the country were used to increase the interest in the important subjects to be brought before the convention, so that on May 5th, 1846, nearly one hundred delegates representing societies and colleges in sixteen different States—New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Georgia, Mississippi, Indiana, Illinois and Tennessee, assembled. The meeting was called to order by Dr. Edward Delafield, of New York, in the hall of the medical department of New York University. Dr. John Bell, of Philadelphia, was appointed chairman, and Dr. William P. Buel, of New York, secretary. The following permanent officers were elected unanimously: President, Dr. Jonathan Knight; Vice-presidents: Dr. John Bell, of Philadelphia; Dr. Edward Delafield, of New York City; Secretaries: Dr. Richard D. Arnold, of Savannah, Georgia; Dr. Alfred Stillé, of Philadelphia.

Just after the officers were conducted to their places, Dr. Gunning S. Bedford, a delegate from the faculty of the Medical Department of the New York University, offered a resolution that since one-half of the United States was unrepresented, the convention should adjourn *sine die*. This resolution was seconded by Dr. G. S. Pattison, the other delegate from the same faculty. This proposition from the representatives of the school in whose college building the convention assembled was a shock to those in attendance. After some minutes of silence the question was called for, with the yeas two—Drs. Bedford and Pattison, nays 74. Several motions were made to withdraw from the college edi-

fice, but after explanation and apologies from both Professors Bedford and Pattison the subject was laid on the table. A committee of nine appointed for the purpose then brought before the convention the subject of medical education in the form of distinct propositions suitable for discussion and action:

That it is expedient for the medical profession of the United States to institute a National Medical Association.

That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States.

That it is desirable that young men before being received as students of medicine, should have acquired a suitable preliminary education.

That it is expedient that the medical profession in the United States should be governed by the same code of Medical Ethics.

These propositions were reported to the convention with the recommendation that a committee of seven be appointed on each subject, whose duty it should be to report at a meeting to be held in the city of Philadelphia on the first Wednesday in May, 1847. The same committee also recommended the appointment of a committee of seven "to prepare and discuss an address to the different regularly organized medical societies and chartered medical schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to the convention to be held in Philadelphia in May, 1847."

At the meeting in Philadelphia there were 250 delegates present, representing more than forty medical societies and twenty-eight colleges, in twenty-two States and the District of Columbia. Medical education was the first subject of discussion. The report of Dr. Couper, from the committee on the subject of "Preliminary Education," was first taken up for consideration, and after a free interchange of opinions the report, with the resolutions appended thereto, was adopted, and ordered to be published as a part of the proceedings of the convention. The resolutions as adopted were as follows, viz:

Resolved, That this Convention earnestly recommends to the members of the medical profession throughout the United States, to satisfy themselves, either by personal inquiry or written certificate of competent persons, before receiving young men into their offices as students, that they are of good moral character, and that they have acquired a good English

education, a knowledge of natural philosophy and the elementary mathematical sciences, including algebra and geometry, and such an acquaintance, at least, with the Latin and Greek languages as will enable them to appreciate the technical language of medicine and read and write prescriptions.

Resolved, That this Convention also recommends to the members of the medical profession of the United States, when they have satisfied themselves that a young man possesses the qualifications specified in the preceding resolution, to give him a written certificate stating that fact, and recording also the date of his admission as a medical student, to be carried with him as a warrant for his reception into the medical college in which he may intend to pursue his studies.

Resolved, That all the medical colleges in the United States be and they are hereby recommended and requested to require such a certificate of every student of medicine applying for matriculation and when publishing their annual lists of graduates to accompany the name of the graduate with the name and residence of his preceptor, the name of the latter being clearly and distinctly presented as certifying to the qualification of preliminary education.

There was some opposition to these resolutions on the ground that they might prevent many young men of limited means from entering the profession, whose natural endowments in spite of the early handicap of deficient education would carry them to the highest rank. After thorough discussion, however, the resolutions were adopted by nearly unanimous vote.

The convention next took up the report of Dr. R. W. Haxall, of Virginia, chairman of the committee appointed to recommend a uniform standard of requirements for the degree of M.D. The several resolutions appended to the report were considered *seriatim*, and after receiving various amendments were adopted as follows, viz.:

Resolved, 1st, That it be recommended to all the colleges to extend the period employed in lecturing from four to six months.

2d, That no student shall become a candidate for the degree of M.D. unless he shall have devoted three entire years to the study of medicine, including the time allotted to the attendance upon the lectures.

3d, That the candidate shall have attended two full courses of lectures; that he shall be twenty-one years of age, and in all cases shall produce the certificate of his preceptor to prove when he commenced his studies.

4th, That the certificate of no preceptor shall be received who is avowedly and notoriously an irregular practitioner, whether he shall possess the degree of M.D. or not.

5th, That the several branches of medical education already named in the report (viz., theory and practice of medicine, principles and practice of surgery, general and special anatomy, physiology and pathology, materia medica, therapeutics and pharmacy, midwifery and diseases of women and children, chemistry and medical jurisprudence), be taught in all the colleges, and that the number of professors be increased to seven.

6th, That it is required of candidates that they shall have steadily devoted three months to dissections.

7th, That it is incumbent upon preceptors to avail themselves of every opportunity to impart clinical instruction to their pupils, and upon medical colleges to require candidates for graduation to show that they have attended on hospital practice for one session, whenever it can be accomplished, for the advancement of the same end.

8th, That it be suggested to the faculties of the various medical institutions of the country to adopt some efficient means for ascertaining that their students are actually in attendance on their lectures.

9th, That it is incumbent on all schools and colleges granting diplomas fully to carry out the above requisitions.

10th, That it be considered the duty of preceptors to advise their students to attend only such institutions as shall rigidly adhere to the recommendations herein contained.

There was much opposition to the adoption of the requirement of six months' attendance at lectures during each of two years, though all those present were quite ready to admit that this period was in itself too short for the work. The resolutions were passed then with a good majority. The reports on medical ethics, on the registration of births, marriages and deaths, and on nomenclature of diseases adapted to the United States having reference to a general registration of deaths, were all adopted. A subject which elicited considerable discussion and drew close attention was that of the licensing of physicians by boards separate from the teaching faculties. The following resolution was adopted as the sense of the convention in this matter:

Resolved, That the union of the business of teaching and licensing in the same hands is wrong in principle and liable to great abuse in practice. Instead of conferring the right to license on medical colleges and State and county medical societies, it should be restricted to one board in each State, composed in fair proportion of the representatives from its medical colleges and the profession at large, and the pay for whose services as examiners should in no degree depend on the number licensed by them.

The most important subject that came before the meeting was the report of the committee on a plan for organizing a permanent

national association. This committee, consisting of Drs. John Watson, John Stearns, F. Campbell Stewart and Nathan S. Davis, of New York; A. Stillé, of Philadelphia; W. H. Cogswell, of New London, Connecticut; and E. D. Fenner, of New Orleans, Louisiana, reported a constitution designed to effect a permanent national organization. The fact that four out of the seven members of this committee were from New York shows how preponderating was New York's influence in the organization of the National Association:

The committee adopted as the basis of organization the principle of representation by making the active members of the association consist of delegates from medical societies and institutions in accordance with a fixed numerical ratio. In the preamble attached to the constitution, the purposes for which the association is organized are declared to be for cultivating and advancing medical knowledge, for elevating the standard of medical education, for promoting the usefulness, honor and interests of the medical profession, for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men, for exciting and encouraging emulation and concert of action in the medical profession and for facilitating and fostering friendly intercourse between those engaged in it.

In May, 1847, the meeting that assembled at Philadelphia under this constitution adopted in New York, organized the American Medical Association as we know it, and thus was initiated what has proved to be the most important guiding force for the uplift of medical education, the raising of professional dignity, and the safeguarding of the people of the country from medical abuses that we possess.

THE BREAK WITH THE AMERICAN MEDICAL ASSOCIATION

For the next thirty-five years the New York State Medical Society continued to be a leading factor in the American Medical Association, looked upon because of its relation as the parent society and the largest of the State organizations as the backbone of the National Association. The sessions of the American Medical Association held in New York always had record attendance, and the leading members of the medical profession in New York State were looked upon as the most prominent upholders of the principles of medical education and professional dignity for which

the American Medical Association was working with confident assurance.

The first generation of New York's members of the National Association had nearly all passed away when in the later seventies some dissatisfaction began to be expressed at the meetings of the Medical Society of the State of New York with the code of ethics which was then supposed to rule the conduct of the members of the regular medical profession. The question at issue may be briefly summed up by saying that in New York City there were a number of homœopathic physicians by whom distinguished members of the regular school of medicine were not infrequently summoned in consultation. According to the code of ethics of the American Medical Association, such consultations with irregular physicians would have to be refused. New Yorkers felt, however, that the way to bring about a lessening of the friction between sectarian schools of medical practice was to require definite medical education for all, but to leave the choice of the therapeutic measures that he would employ to the physician's own judgment.

The discussion of the points of professional ethics involved culminated at the annual meeting of the New York State Medical Society in 1881 in the appointment of a committee who drew up a new code of ethics to be substituted for the one then in force. Their report of a code was adopted by the State Society in February, 1882, though it met with considerable opposition from many of the county societies throughout the State of New York.

In June, 1882, the American Medical Association at its annual meeting held in St. Paul, refused to receive the credentials of the delegates from the Medical Society of the State of New York, or to admit them to its proceedings, because of the adoption of the revised code of medical ethics by the State Society. The old code had been accepted for over thirty years and had come to be considered as one of the fundamental laws of the American Medical Association. This was the beginning of a rupture in the formal relations between the American Medical Association and the New York State Society which was destined to last for nearly a quarter of a century.

It was hoped that this action of the American Medical Association would cause the New York State Medical Society to withdraw from its position on the subject of the code, but it had exactly the opposite effect.

At the annual meeting of the State Society held in February, 1883, a resolution was offered which was meant to take the place of the formal code of ethics that had been adopted in the previous year. This resolution was carried. Embodied in it was the statement "that the only ethical offences for which the profession of New York claim and promise to exercise the right of discipline, are those comprehended under the commission of acts unworthy a physician and a gentleman." The circumstances under which the resolution was offered and the debate before its adoption may be found in the "Transactions of the State Society" for 1883, page 78. The Medical Society of the State of New York thus formally became a "no code" organization.

The State Medical Society as then constituted was committed to the abolition of a formal code of ethics, but a personal canvass of the opinions of all the physicians of the State in the matter of code showed that out of nearly 4,000, over 2,500 were for the National Code and wished to maintain their affiliation with the American Medical Association, while only somewhat more than a thousand were for the new code, and less than 250 for no code. Not wanting to be separated from the National Association because of the code question, another State organization called the New York State Medical Association, in affiliation with the national body, was organized in February, 1884, and held its first annual meeting in the fall of that same year.

The rival State medical organizations continued to exist side by side in New York for about twenty years. During the last few years of the nineteenth century the sentiment began to make itself felt very generally throughout the medical profession of New York State that the maintenance of two State medical organizations was without any proper reason in the nature of things. A new generation of physicians had come into practice since the events which had brought about the disunion, and among them especially opinions in favor of the reunion of the two State organizations began to be expressed freely and frequently. A rather anomalous condition, though interestingly hopeful for reconciliation, developed in New York City where many physicians were members of both the County Medical Society and Association. This was an index of the feeling on the part of many members of the profession that the reasons for disunion were not nearly so important or so profound as had seemed, or, at least that, in the

natural development of things, many of the older reasons for separation from the national body had lost their former significance.

This state of affairs could scarcely be allowed to continue for long. If the members of the medical profession could belong to both organizations, then the differences between them were surely not essential, and the reasons for separation had evidently lost their weight. It was in the New York county organizations, therefore, that the movement for reunion took form and gradually gained the strength necessary to bring about the fusion of the two State organizations. Owing to legal difficulties, mainly dependent upon the indefinite character of certain of the early by-laws of the medical organizations, the actual accomplishment of reunion was delayed longer than had been expected. It was completed, however, in time for the celebration in a compact body by the medical profession of the centennial of the New York State Medical Society in 1906.

By this time the matter of the code of ethics in the national organization had worked itself out to a much more liberal conclusion. Some of the States actually in affiliation with the American Medical Association were either "no code" States or were under a code of their own formulation. In New York state, in the meantime, the liberalizing of the profession had facilitated the securing of legislation properly regulating the practice of medicine. While intolerance had, as is always the case, rather favored sectarianism, the newer liberal attitude led to the abolition of sectarian designations on physicians' signs as displayed, and gradually brought about a minimization of the differences between the schools. Above all, the legal regulations which required similar standards of education in the schools and licensing by a State Board after definite and identical examinations on the sciences underlying medical and surgical practice, redounded to the benefit of the profession and of the public. The last step in this direction was the abolition of the special examination of therapeutics, so that all those who were to practise as physicians in New York State had to pass exactly the same tests. Physicians were thus left free to choose for themselves the mode of treatment that they would adopt.

CHAPTER X

CLINICAL MEDICINE UP TO THE CIVIL WAR

NEW YORK'S contribution to medical science, and above all to such development of medical practice as has made the physician ever so much more useful in his profession, has come more particularly in the field of general medicine than elsewhere in medical advance. There has not been a quarter of a century scarcely for the last two hundred years when New York has not had some distinguished physician and very often more than one or two of them whose distinctive work in the field of general medicine deserves that his memory should not be forgotten in the history of the profession of the country. Lieutenant-Governor Colden, Peter Middleton, the Bards, father and son; Nicholas Romaine, David Hosack, Macneven, Alonzo Clark, Loomis, Austin Flint, Janeway, Delafield,—all these are names to conjure with in the realm of American medicine, though there are many others of scarcely less distinction that should not be forgotten. Our own contemporaries have maintained the prestige of New York in our time, but the significance of their work must be left for the future historian.

Our nineteenth century medicine divides rather naturally into two at the time of the Civil War. It was at this time that sanitary science came to be applied in such a way that the great epidemics so characteristic of the earlier period were gradually brought under control. The generation of Americans who went through the Civil War came out of it feeling something of their own power, and very much was accomplished in all lines immediately afterwards. There was as distinct an awakening in medicine as in other lines of thought and work. When physicians had to turn aside from the consideration of scientific aspects of medicine to take up the treatment of epidemic disease under the crowded unsanitary conditions which obtained before the Civil War, little could be accomplished. After the sanitary revolution which we have discussed in a chapter by itself, epidemics became a dwindling factor in the practice of

our New York physicians, and they were enabled to devote themselves more strictly to scientific medicine.

Some of the difficulties and dangers of the practice of medicine in New York at the end of the eighteenth and the beginning of the nineteenth century may be readily appreciated from the paragraph in Thacher's introduction to his "American Medical Biography," in which he names the gentlemen who were practitioners of considerable merit in the city of New York since the American War [of the Revolution] and whose names are deserving of commemoration. It may be noted that five out of seven of the physicians whom he mentions died of yellow fever. The sixth died at a comparatively early age, very probably of consumption, which was particularly rife and to which physicians were subjected more especially in their visits to the crowded tenement quarters and in their treatment of the slaves who, according to tradition, suffered severely from it. The seventh had a death in early middle life. Dr. Thacher said:

Dr. Malachi Treat was a surgeon in the hospital department during the whole of the American struggle for independence, and part of the time officiated as deputy director of the hospital. He died in New York of the yellow fever. Dr. William Pitt Smith was a pupil of Dr. Treat, and was also in the hospital department during the war, and he also fell a victim to the yellow fever in 1797. Ebenezer Crosby, M.D., was a native of Braintree, Massachusetts, was graduated at Harvard University in 1777, and completed his medical education at the University of Pennsylvania. Dr. Crosby was at an early period of the war appointed surgeon to General Washington's guard, and was received into his military family, in which he continued until near the close of the war. On the return of peace he took up his residence in New York, where he soon acquired a respectable circle of practice, and in the year 1785 was chosen Professor of Midwifery in Columbia College, which appointment he retained until his death, which occurred the 16th of July, 1788. Dr. Amasa Dingly was a native of Marshfield, Massachusetts, and was graduated at Harvard University in 1785. He settled in New York, where he displayed abilities and a spirit of enterprise which would have raised him to eminence had his life been protracted. Benjamin De Witt, M.D., merits great praise for the services which he rendered to the college, more particularly in obtaining the liberal grant from the State of \$30,000. He was prematurely cut off by the yellow fever while in the discharge of his official duties of physician of the port of New York in 1819. He published on the *Datura Stramonium*, and a paper on the salt works of Onondaga. "Richard Bayley, M.D., was among the most eminent of the physicians of his time, and equally distinguished in medical and surgical practice; after a life of great activity and usefulness he died of yellow fever, which he con-

tracted in the discharge of his official duties as health officer of the port of New York, in August, 1801, aged 56 years." John V. B. Tennant, M.D., completed his medical education in Europe. While in London in 1765 he was created a member of the Royal Society. His course of instruction in obstetrics was able and satisfactory, and laid a foundation for improvement in that branch in the Medical School of New York. He died at an early age of the yellow fever, in the West Indies, whither he had gone for the benefit of his health.

More than twenty physicians, according to Thacher, were the victims of yellow fever during three months of the year 1798. Fortunately a group of men were spared who did some excellent work in medicine, and left their impress not only on the physicians of New York in their own generation but some of whose careers are landmarks in the history of medicine in America.

Dr. Nicholas Romaine was one of the most influential personalities in the medical profession of New York during the generation after the Revolution. Born in the city in 1756, he seems to have spent most of the years of the Revolutionary period in Europe, studying in Paris, London and Leyden, and coming back with the prestige of his European studies as a basis for a successful career. He organized the first medical school in New York just after the Revolution (see Chapter IV), but differences with the Regents, for which he was not entirely to blame, prevented its success. For a while he taught singlehanded all the branches of medicine. After some years of successful practice he went abroad again, and on his return helped to organize the College of Physicians and Surgeons, of which he became president. He was made a Fellow of the Royal College at Edinburgh while abroad, the first American to receive that honor, and came back to be looked up to still more, which doubtless accounted for his election as president of the New York Medical Society and later of the State Medical Society, and augured well for the new school. Once more there were difficulties, however, and Romaine was gradually drawn away from interest in medicine by speculation which led to financial embarrassments.

The first member of the profession in New York who gave up surgery in order to devote himself particularly to medicine was Dr. David Hosack, whose name is enshrined for us in the title of the Assembly Hall of the Academy of Medicine. In his early years of practice he did some enterprising and successful surgery.



DAVID HOSACK

In 1808 he tied the femoral artery for aneurism, the first time that operation was ever done in America and more than ten years before he introduced into this country, just after his return from Europe, the method of treating hydrocele by injection. He wrote rather important papers on tumors of the breast, tetanus, *tic douloureux*, and on the importance of leaving wounds open to the air in order to check hemorrhage. When he was about forty years of age, however, he gave up surgery to devote himself almost exclusively to medicine. This was rather unusual, for men practised their profession from all standpoints, and about this time we owe to Nathan Smith, a contemporary of Hosack, an excellent description of typhoid fever founded on careful clinical observations, and at the same time a description of an ovariectomy done by him which he thought an original operation, though he had been anticipated by McDowell.

Dr. Hosack's life is typical of many of the things of his time, and so it seems worth while to devote more detail to it than can be afforded for sketches of others. His father, Alexander Hosack, was a Scotch artillery officer in the army which came out with Lord Amherst for the French and Indian War, and after the war was over he settled in New York. David, the eldest boy, was given an old-fashioned education in the classics. He entered Columbia College, but becoming interested in medicine occupied himself with that in leisure hours. He was one of the students in Dr. Bayley's rooms in the unoccupied New York Hospital at the time of "The Doctors' Mob," and might have been injured by the rioters, only he was recognized and rescued by a friend. He graduated at Princeton at the age of twenty, returned to New York to study medicine, but finished his medical education in Philadelphia at twenty-two. He married almost at once, and thinking that the new capital of the nation at Washington would be a good place to practise he went there, or rather to Alexandria, Virginia, because Washington was yet in embryo, but soon realized his mistake. He returned to New York, but as he says himself, "observing the distinction which our citizens at that time made between those who were educated at home and those who had additional instruction from the universities of Europe, and knowing how little property I had to expect from my parents, I found that my chief dependence was upon my own industry and unceasing attention to the profession I had chosen as the means of my

subsistence; my ambition to excel in my profession did not suffer me to remain insensible under such distinction."

Young Hosack had some good letters of introduction to Europeans of distinction, and above all in Edinburgh was received by "the best of the kindly Edinburgh society." He came in contact with some of the most brilliant intellectual men of all professions—lawyers, clergymen, writers, as well as doctors, and this experience was most valuable to him and made him what he literally became, the leader of the intellectual life of New York during the early part of the nineteenth century. After a year in Scotland he went to London and had almost equal good luck in the breadth of the influences brought to bear on him. John Hunter died a few months after his arrival, but Astley Cooper and Abernethy, Babington, Banks, Robertson and Smith, were among those with whom he was brought in contact. While he devoted himself seriously to general medicine and surgery, obstetrics, anatomy and botany, which would seem quite enough for any young man's time, he wrote a paper, "Observations on Vision," for the Royal Society, for which he received its thanks. On the other hand he did not neglect æsthetics and tells in his journal of having seen Mrs. Siddons, Mrs. Jordan, Mrs. Pope, Mrs. Eden, Miss Farren, and the other great actresses famous in his generation, but whose reputation still remains in ours. No wonder he was to be a leader in New York's social life generally after his return to America.

On the return voyage young Hosack, into whose twenty-five years a great deal of experience had already been crowded, was to have an unforgettable call made on his professional abilities. The voyage lasted eight weeks, typhus broke out among the passengers, and Hosack being the only doctor on the ship, was kept busy almost night and day. His services were very much appreciated by the passengers and especially by Mr. Law, a wealthy Englishman, younger brother of Lord Ellenborough. Mr. Law had letters to and acquaintance with many distinguished New Yorkers, and when he landed he made it his business to call attention to the skill and ability and above all the fidelity to duty of Hosack. It might be assumed that such a recommendation would have little significance, but as a matter of fact two of the men to whom Hosack was thus introduced were Alexander Hamilton and Aaron Burr, and they came to think so well of him that he was selected as their family physician. He became a close friend of Alexander





NEW YORK HOSPITAL, 1820

Hamilton's, and was present at the duel between him and Burr, and took care of the dying Hamilton.

Under such good auspices it is not surprising that Hosack was successful from the very beginning in New York. He made \$1,500 the first year of his practice, which would be a demonstration of ample success even in our time, but meant much more one hundred and twenty-five years ago, when money had a purchasing power at least some three times what it has at the present. Hosack came to be, as Mumford has declared, "probably the best known and the most popular, the most accomplished and the most useful physician in New York." Above all, his charity, his public spiritedness, his good taste, his breadth of culture, his own scholarship, made him a leader of the most valuable kind in the city. He was an excellent teacher, but it is his surpassing merit to have recognized the necessity for good medical schools with serious preliminary foundations for medical study. He devoted himself to bringing about a reformation of the unfortunate conditions which existed in medical education as well as medical practice in this country.

In 1797, when he was but twenty-eight years of age and only three years after his return from London, he was given a professorship in *Materia Medica* at Columbia. Before this he had been teaching for two years as Professor of Botany to college as well as medical students, and he continued to occupy both chairs.

Hosack seems to have had an excellent faculty for judging of the value of men, if his selection as a partner of John W. Francis, who came to be one of New York's leading physicians during the first half of the nineteenth century, can be taken as a criterion. Francis entered Hosack's office in 1807, while he was still a student in arts at Columbia, and when he was graduated from the recently founded College of Physicians four years later at the age of twenty-two he was immediately taken into partnership by his preceptor. Even before this, Hosack had come to depend on him in many ways, and doubtless his foundation of the *Medical and Philosophical Register* was due not a little and was brought about just at this time because of Dr. Francis' interest in medical literature, and the feeling that most of the routine editorial work could be transferred to him. The *Register* was published anonymously for three years, and then in 1814 was issued under the joint names of Hosack and Francis as editors. By this

time Francis, partly through his own energetic, enterprising ways but undoubtedly also through Hosack's influence, had become Professor of the Institutes of Medicine and Materia Medica in his Alma Mater, the College of Physicians and Surgeons, as yet only a struggling institution. Hosack thought so much of young Dr. Francis' medical knowledge and judgment that he preferred him as a consultant to the older men around him.

Dr. Francis, thus at the age of twenty-five, came into prominence in New York as a professor and medical editor, having begun his career with rather dubious prospects and certainly with no great promise of immediate professional success. He was a selfmade man, and owed his getting on to his own energetic initiative. He was a son of a German grocer, his father not long over from the Fatherland, and was born in Warren street, New York, in 1789. In his boyhood he had to help in his father's store, and had slight opportunity for going to school, but even from early years he was ambitious to get an education and made and took every chance to educate himself. He became an apprentice to a printer, with the idea that this would keep him in closer touch with books than any other occupation. He liked to compare himself to Benjamin Franklin in this regard, and also in others, one mutual feature of his favorite comparison being their low size. He studied Latin in the intervals of his work and during his lunch hour and in the evenings, until finally, the grocery business having prospered rather well, his mother, seeing his enthusiasm for higher education, afforded him the chance to go to Columbia College. All during his life he exhibited the traits of his boyhood, and took advantage of hours that he could steal from his professional duties to improve his mind and get in touch with the great classics.

A man who did excellent thoughtful work in medicine in the early part of the nineteenth century was Valentine Seaman (1765-1817), a descendant of an old English family which had arrived from England and settled in Hempstead, Long Island, shortly after the middle of the seventeenth century. After studying under Nicholas Romaine at the City Almshouse, New York's medical instruction being in abeyance because of the occupation of the city by the British, young Seaman went to the University of Pennsylvania, where he graduated in 1791. He took an active interest in all medical matters. In an effort to improve medical instruction in New York he formed with others a medical institution associated

with Queen's College, New Brunswick, New Jersey, but it was only shortlived. He had much to do with the practice of vaccination, vaccinating his own son, lecturing publicly on the subject and organizing the first institute for the provision of vaccine material. He wrote a little book, "The Midwife's Monitor and Mother's Mirror" (New York, 1800). He was deeply interested in the question of providing proper education for midwives. He died of consumption at the early age of fifty-two, but well deserves to have an enduring fame in New York medical history.

One of the most interesting men in New York medicine at the end of the eighteenth century, after the Revolution, was Dr. Elihu Hubbard Smith. Born in Connecticut, he entered Yale with high honors, be it said, at the age of eleven, though that was thought to be very young for a matriculant, and graduated at fifteen at the head of his class. He lived only a dozen years more, but succeeded in impressing himself deeply on that medical generation and winning a place in our history. His father was a physician, and for five years he studied and practised with him at their home in Litchfield, Connecticut. Then he went to Philadelphia and after a year was graduated M.D. with high honor when he was just past twenty-one. He made an attempt to build up a country practice at Wethersfield, but his very brilliancy seems to have told against him, though perhaps his youthful appearance and the enmity of some of the older physicians was the basis of his ill success. His failure was fortunate both for himself and the medicine of his time, and especially for New York, though his influence was to be exerted but for a very few years. His place in the history of medicine is due mainly to the fact that he established the first American medical journal, the *New York Medical Repository*, in conjunction with Samuel Latham Mitchill and Edward Miller. He was the moving spirit in this new departure and it was his literary tendencies that made him realize that America needed the stimulus of a medical journal to encourage observation and research, and at the same time diffuse information. His own contributions to the *Repository* were frequent and on the most diverse subjects. His interest in the history of medicine is shown by his papers "On the Pestilential Diseases which Appeared in the Ottoman or Carthaginian or Roman Armies in the Neighborhood of Syracuse," a "History of the Plague of Athens," and then there are a series of "Letters to William Buell, Physician, Sheffield, Mass., on The

Fever which Prevailed in New York in 1795." These letters were subsequently collected and published by Noah Webster. Dr. Smith's interest in zoölogy accounts for his paper on "The Natural History of the Elk."

A very prominent physician of the first half of the nineteenth century in New York was William James Macneven (1763-1841), who came to this country after his participation in the Rebellion of '98 in Dublin with Lord Edward Fitzgerald and the Emmets had been followed by imprisonment and then practically by banishment from his own country. Being unable to secure a medical education in Ireland because as a Catholic he would have had to take oaths violating his conscience, he was sent by his uncle Baron Macneven to Germany, where he received his college education at Prague and his degree of Doctor in Physics at Vienna when he was twenty-one years of age. He returned to Dublin and took up practice with success, but was arrested for taking part in the political revolution of 1798, confined in Kilmainham jail, Dublin, and subsequently removed to Fort George, whence he was released in 1802. He spent the next two years on the Continent traveling and writing "A Ramble through Switzerland," and sailing from Bordeaux, arrived in New York on the afternoon of July 4th, in the midst of the celebrations in commemoration of the Declaration of Independence. According to tradition, with true Irish readiness and enterprise he joined heartily in these, making a speech for the occasion. He fixed upon New York as his future home. He soon attracted attention, and Columbia College having conferred the degree of M.D. on him, he delivered a course of lectures on clinical cases for the students of the opening session of the College of Physicians in 1807, the material for the course being found among his patients in the New York Almshouse. The next year he received from the Regents of the University of the State of New York the appointment of Professor to the Chair of Midwifery in the College of Physicians and Surgeons. Two years later, on a reorganization of the school, Dr. Macneven was chosen Professor of Chemistry and continued to fill this chair for many years. A paper of his entitled "Exposition of the Atomic Theory" was reprinted in the "French Annals of Chemistry." It is one of the very early serious contributions to the subject of chemistry made here in America, and the first to be noticed in Europe. In 1821 Dr. Macneven published an annotated edition of "Brandes' Chem-



W. J. MACNEVEN

istry," which was used as a textbook in a good many of the medical schools of this country for some time afterwards. Dr. Macneven was the founder with Dr. Benjamin de Witt in 1812 of the *New York Medical and Philosophical Journal*, a periodical composed chiefly of selections. He edited it with Dr. de Witt, and wrote a series of papers for it on medical subjects.

A well known physician of this time, a pupil of Dr. Hosack, who died, however, at the early age of thirty-six from consumption, was Dr. Jacob Dyckman, whose accomplishments gave promise of distinguished contributions to medicine. While he did some operations which attracted attention as surgeon at the New York Almshouse, his important contribution to medicine was an improved edition of "Duncan's Dispensatory" (New York, 1818), and an essay upon adipocire which was published in "The Transactions of the New York Lyceum of History." He was planning a work upon the vegetable materia medica of the United States, and had made considerable progress in the collection of materials towards it, when he had to give up all work because of the advance of his consumption and was not able to return to it. Thacher has high words of praise for him.

A man whose early death by accident probably shut him out from a most distinguished success in medicine, but who even in his short forty-six years accomplished much that deserves to be remembered, was Lyman Spalding, born in Cornish, New Hampshire, in 1775. He became an apprentice of Dr. Nathan Smith, who was practising there when he was a growing boy. At Smith's advice he was sent to the Harvard Medical School and then joined his preceptor in the foundation of a medical school at Dartmouth. He settled down to practise in Portsmouth, New Hampshire, but gave his spare time to experimental medicine, to the study of dissection, the cultivation of medicinal plants, and the gathering of mortality statistics of which he sent copies to many physicians, thus arousing their interest in the diseases of their neighborhoods. Benjamin Rush declared of these reports of Spalding that they were "an ingenious improvement of that species of publication, and calculated to add to the certainty of our knowledge upon several medical subjects."

Dr. Spalding's courage and thoroughgoing zeal for medical progress can be judged very well from his public test of the efficacy of vaccination as a preventive of small-pox, which he performed

in the Small-pox Hospital at Portsmouth Harbor in 1801, with some of the early vaccine received in this country. He and four recently vaccinated persons lived on intimate terms with two small-pox patients, and then, to assure the demonstration, were inoculated with the actual small-pox virus, yet did not take the disease. Small-pox inoculations were very well understood before this and practised for nearly a century, so that there could be no doubt of the absolute conclusiveness of this control test.

Among his contemporaries, Spalding became known particularly for his beautiful dissections. When the famous Alexander Ramsay came at Dr. Nathan Smith's invitation to lecture on anatomy at Dartmouth, Dr. Spalding acted as prosector, bringing a precious cargo of dissecting material just when Dr. Smith was almost in despair as to securing it. In 1809 and 1810 Spalding studied in Philadelphia with Rush and Physick, but he spent a great deal of his time with Casper Wister in anatomical work. An old letter says of him, "The whole medical world of Philadelphia is talking of Spalding's beautiful anatomical demonstrations and preparations of the lymphatics." No wonder that the Western College of Physicians and Surgeons of New York at Fairfield was very glad to secure him as a Professor of Anatomy, and that he was able to do so much for that school and give the students such a stimulus to solid scientific work in medicine.

He spent nearly ten years in New York City, and while he secured a good practice it was not very remunerative, probably because Dr. Spalding was much more intent on the science than the art of medicine. To him more than to any other is owed the foundation of the United States Pharmacopeia. It was he who first proposed formal action on the matter to the New York County Medical Society. The task was difficult enough at the beginning, but he succeeded in bringing the organization to call the first national meeting to discuss the publication of the pharmacopeia. His grandson says very justly of him at the conclusion of his article in Kelly's "Encyclopedia of American Medical Biography," "Dr. Lyman Spalding was the originator, founder, and almost single-handed worker upon the original pharmacopeia of the United States." He did much more than his share of scientific work in medicine in the early part of the nineteenth century, and having accomplished so much in the brief twenty-five years of his medical work, it is indeed too bad that he was taken away just when

his powers had ripened to the maturity that would have enabled him to accomplish so much more.

Another of the prominent physicians of New York in the first half of the nineteenth century was John Stearns, who initiated the movement which gave rise to the Medical Society of the State of New York, of which he was elected secretary at its first meeting in 1807. He was at this time practising in Saratoga county, New York, having been born in Wilbraham, Massachusetts, May 16, 1770, and graduated from Yale in 1789. He received his medical education in Philadelphia, and took up practice at Waterford, not far from Saratoga. His election as a State Senator in 1808 led to his removal to Albany, where he remained for nine years, receiving in the meantime the honorary degree of Doctor of Medicine from the Regents of the University of the State of New York. He was elected president of the Medical Society of the State of New York in 1817 and served for four terms, meanwhile in 1819 removing to New York City, where he practised until his death in 1848. In 1846, when already in his seventy-seventh year, he was elected president of the New York Academy of Medicine on its organization. He made a number of contributions to the medical literature of the time. His first paper was on the medical properties of ergot for parturition. This drug had not been used for this purpose in this country up to that time. His prominence in the professional life of New York City and State has deservedly given him a place as one of our patriarchs.

Dr. Stearns introduced to the profession, as we have said, the use of ergot or, as he called it, the *pulvis parturiens*. He gave it as "a decoction, boiling half a dram of the powder in half a pint of water and giving one-third every twenty minutes until the pains commence, or in powder from five to ten grains." It had been used for some time before by the country people, but now came into medical practice. There was quite a controversy over its use. Some declared that it did not have the effect claimed, and that this was merely consequent upon an induced mental state. Investigation showed, however, that substitution was being practised, and that many so-called specimens of the drug were quite inert. After the preliminary period of opposition there came the usual abuse of the drug, and Dr. Beck in one of the essays afterwards incorporated in his little volume on "Infant Therapeutics" called attention, as has often been done since, to the large number of cases

in which ergot being given to hasten the birth process so as to save the doctor's time, the child was born dead. Dr. Beck insisted that it should never be used "except where nature is incompetent to a safe delivery," "as a time saving agent no practice is more unjustifiable and reprehensible."

New York State may well claim the honor of having been the home and the training place in medicine of the man who more than any other added to our knowledge of the physiology of digestion in the United States. This was William Beaumont, who, though born in Connecticut, taught school in the village of Champlain, New York, took up the study of medicine there with two neighboring doctors, Seth Pomeroy and Benjamin Chandler, and began practice just before the War of 1812. With the breaking out of the war he applied for and obtained the position of assistant surgeon to the Sixth Infantry, and when the war was over returned to Plattsburgh, now confident in this medical knowledge to practise very successfully for the next five years.

Beaumont was not, however, of a settled disposition. In 1820 he gave up his practice in Plattsburg, applied once more for an army position, and was made a surgeon with an assignment to Fort Mackinac, on the Straits of Mackinac, in Northern Michigan. It was under these apparently almost impossible circumstances that the opportunity to do his great work came and he took it magnificently. The story of what he did is well known. Alexis St. Martin, a young French Canadian, was wounded by the accidental discharge of a shotgun, the muzzle of which was quite close to him. The wound was just under the left breast and seemed inevitably fatal. Beaumont was called, dressed it for form's sake, but death did not occur. Recovery took place with a fistulous track leading into the stomach closed by a valvelike flap of mucous membrane. Beaumont took young St. Martin into his service for three years and made observations on digestion through this fistulous opening. He noted down his observations and published them in a book, "Experiments and Observations on the Gastric Juice and the Physiology of Digestion." This was published at Plattsburgh by F. P. Allen (1833), showing that Beaumont still considered himself attached to his former New York home. Five years later the book was republished in Edinburgh. Andrew Combe, who edited the Edinburgh edition, declared "that it would be difficult

to point out any observer who excels Beaumont in devotion to truth and freedom from the trammels of theory and prejudice."

After his preliminary series of experiments, St. Martin left Beaumont, and it was only after a long search that the now thoroughly awakened observer located him two thousand miles away and got him to return for further observations. No wonder that, considering the conditions under which he labored and the results he left behind, Beaumont should be declared one of the great historic characters of the world. Comparatively little has been added to Beaumont's work done nearly ninety years ago. What he discovered revolutionized the knowledge of digestion of the time. Beaumont is attached to New York by another strong tie, that of his wife, Deborah Platt, of Plattsburg, who was a descendant of General Nathanael Greene, of the Revolution. Only for her strong sympathy with her husband's work it would have been very difficult for him to have accomplished it. Something of her strength of character may be realized from the fact that when a young girl she voluntarily went to the pest house and exposed herself to small pox with the idea that if she went through an attack of the disease she would then be allowed to nurse soldiers who might come down with small-pox during the War of 1812, which was then being waged. She took the disease, and recovered to do the desired work.

One of New York's finest contributions to American medicine, though perhaps the State is not always given the credit it should have in the matter, was Nathan Smith Davis, to whom more than any one else is owed the foundation of the American Medical Association, with all the benefit which that has brought to professional life in this country. Dr. Davis was born at Greene, Chenango county, New York, January 9th, 1817. He graduated when but twenty years of age as a physician at the Western College of Physicians and Surgeons, New York, and it might seem as though his early graduation with insufficient intellectual development before taking up his medical studies, and the very deficient course which was the best that could be secured at that time, would have militated against his efficiency as a physician, but few men have done better work in this country than Dr. Davis. In spite of the defect in his own education, he did a great deal to uplift medical education in this country, and we owe to him more than to any other the educational movement which has gradually put medical education on a proper footing among us. He deserves the name

of founder of the American Medical Association. (See Chapter VIII.) His efforts for professional and educational uplift continued unabated during a long life, most of which was spent in Chicago, after his removal there in 1849 on acceptance of the chair of Physiology and Pathology in Rush Medical College.

One of the most widely known of mid-nineteenth century physicians in New York was Alonzo Clark, a man of great force of character whose name became associated with many therapeutic measures which influenced medical practice deeply throughout the country yet have all been abandoned as of illusory value. He was a self-made man. After he had received his preliminary education at the Hopkins Academy and taken his Bachelor's degree from Williams College in 1828, his father, not rich in the world's goods, offered him a thousand dollars to secure his professional education and a start in life. Young Clark refused it, wishing to work his own way through, so he taught school and obtained his degree in medicine from the College of Physicians and Surgeons in 1835 when he was already past twenty-eight years of age. In spite of his absolute dependence on his own efforts for a living, he ventured to spend several years in London and Paris, and then came back to devote much time in the early years of his practice to autopsy work in order to confirm his knowledge of diagnosis. His treatment of peritonitis by opium became famous, but not less so than his management of typhus fever by removing the window sashes in the wards, giving alcohol freely (see chapter on Epidemics), and securing the utmost cleanliness as the basis of his therapeutics. He held the professorship of Pathology at Woodstock, Vermont, for thirteen years, and the chair of Physiology and Pathology at the College of Physicians and Surgeons, New York, for some thirty years. His disposition can be appreciated from a terminal episode in his life. One day while he was lecturing he had an attack of vertigo consequent upon the arterio-sclerosis which finally led to his death, and he dropped into a chair until the attack would pass. In the meantime he said jestingly to his students, "For many years I have held this chair, and never until this moment occupied it literally."

A distinguished up-State New York physician well known particularly about the middle of the nineteenth century was James MacNaughton. He was born in Scotland, in 1796, and died at the advanced age of seventy-eight in Paris, where he was taking a



ALONZO CLARK

vacation. He received his medical education at the University of Edinburgh, and then took a position as ship surgeon, but after a few voyages landed at Quebec and subsequently settled in Albany. He was scarcely thirty when he was appointed Professor of Anatomy and Physiology in the College of Physicians and Surgeons of the Western district of New York, at Fairfield. His personal popularity with the students is said to have had much to do with the more than doubling of the number of students which took place shortly after his acceptance of the chair. Subsequently he accepted the chair of Theory and Practice of Medicine in Albany Medical College, with a like increase in the number of its students. He will be always memorable in Albany for his fearless and untiring efforts to stem the tide of the cholera epidemic of 1832 which carried off so many people, and which had proved paralyzing to the efforts of others.



CHAPTER XI

SURGERY UP TO LISTER

JOHN JONES had given New York a prominent place in American surgery before and during the Revolution, and New York continued to be an important center of surgical influence in this country ever after. It is not too much to say that in the first half of the nineteenth century the surgical work done in New York City, though it was for long not the metropolis of the country as it became later, attracted more attention than that of any other city in the United States. A number of ambitious young men made special studies in anatomy, surgery and surgical diagnosis in London, Edinburgh and Paris, and came back to be surgical teachers not only for their professional colleagues of New York but for the country generally. The field of surgery was very limited, and most of them practised medicine as well as giving special attention to surgery, but in spite of this divided devotion they succeeded in doing some remarkable work that well deserves a place in medical history. As a rule, they were men of broad education, whose knowledge of the sciences allied to medicine was the best available in that time.

The surgery of the first part of the nineteenth century was very different from the surgery of the end of the century in nearly every way. The discovery of anæsthesia made a very great difference and enabled surgeons to intervene in many cases where otherwise patients and their friends refused operation, and antisepsis greatly broadened the field of surgery. To a great extent the surgery of the pre-anæsthetic period was emergency surgery. The patient literally had to be operated on at once, or at least without much delay, or he would surely die. Amputations, excisions of bone and of external tumors, constituted the largest number of surgical opportunities. Certain men made a specialty of cutting for stone in the bladder, and lithotripsy was beginning to attract some attention, and that was about all. The ligation of arteries for aneurysm constituted a surgeon's special opportunity for fame. Such

arteries as the brachial, the carotid, the subclavian and even the innominate, were tied. Men secured worldwide fame for such ligations, and they represented the most difficult problem of early nineteenth century surgery.

It is not surprising that there should have been so much prestige accorded for these operations, for they had to be done on a patient fully conscious or at most with senses dulled by alcohol and opium, in the most dangerous regions of the body, so far as the possibility of fatal hemorrhage is concerned, and with all the possibilities of inadvertent injury consequent upon the patient's restlessness and shrinking from pain. Usually, before doing one of them, an operator practised a series of the most careful dissections of the region on which he was about to operate, practising not only for the sake of the most absolute knowledge of all relations, but also in order to be able to operate rapidly, for, the patient being unæsthetised, time was an extremely important element for the success of the operation. When such an operation was to be performed invitations were issued, days before, and men interested in surgery traveled considerable distances, even with their slow means of transportation, in order to be present at it. The successful performance of these operations was more than an event, it was a sort of triumph, and priority in the doing of any one of them gave a surgeon a place in the temple of surgical fame and recognition all over the world.

Surgeons of the time thought that with the bounds of accomplishment reached in these there was no further possibility of the development of surgery, and that surgical intervention had gone to its limit for the saving of life. It must not be forgotten that when young Lister, afterwards Lord Lister, married the daughter of the distinguished Scotch surgeon, Syme, his father-in-law said to him that unfortunately he was coming into surgery at a time when the great surgical developments had already been made and when any further evolution of surgery except in comparatively unimportant details, could scarcely be looked for. There was no chance any longer for a man to secure a place in surgical history, though of course surgery provided an opportunity for a satisfactory life work and the making of a good living. The great prize of achievement that would always be remembered was out of the question. One of the greatest of living surgeons talked thus to the man who was to revolutionize surgery and make it possible for surgeons to

intervene in cases where there had been no thought of appeal to surgery before. Syme's view, however, was exactly that of the men of the early part of the nineteenth century.

The first New York surgeon to reach eminence in this country after the Revolution was Dr. Wright Post. He was born at North Hempstead, Long Island, in 1766, and like so many of the other Long Island boys of the time, educated at home. He began his medical studies with the well known surgeon, Dr. Richard Bayley, of "Doctors' Mob" fame. Indeed, Dr. Post himself was delivering a course of lectures on anatomy while Dr. Bayley was teaching surgery at the time when the riot took place. Post's preparation for this teaching had been four years of hard work under Dr. Bayley, and then two years with Dr. Sheldon, a widely known teacher of anatomy and surgery in London in the early eighties of the eighteenth century. In 1792 the professorship of Anatomy and Surgery in the College Medical School, held as a single chair, was divided, and Dr. Post became the Professor of Surgery. This gave him prestige, and the position of surgeon to the New York Hospital added to it. Some of his operations brought him fame, the most important being in those days, of course, the ligation of an artery. Dr. Post was the first in this country to tie the subclavian artery above the clavicle. He was also the first to do Hunter's operation of ligation of the femoral artery for popliteal aneurism in this country.

After a short occupancy of the chair of Surgery he became Professor of Anatomy, which he retained until the consolidation of the Medical School of Columbia with the College of Physicians and Surgeons, when he became Professor of Anatomy and Physiology in the new faculty. He continued his surgical work all this time, being probably the busiest surgeon in the city. His anatomical work, instead of being considered in any way a handicap because of possible conveyance of putrefactive material, was, on the contrary, thought to be eminently advantageous because it kept him constantly in touch with details of anatomical relations and applied anatomy. As a teacher, Post exercised his deepest influence. He published little. Dr. Valentine Mott has given us the best idea of his work as a teacher:

Wright Post was at that time (1805) a man of about forty years of age, tall, handsome, and of fashionable exterior, wore long whiskers, and

his hair powdered and tied back in a queue. Those who recollect his thin worn figure in later years, wrapped in a furred surtout, could scarcely have recognized in him the elegant gentleman of my early days. Dr. Post had at this time attained to the very highest rank in his profession, both as a physician and surgeon, and although equalled in the extent and renown of his surgical practice by his distinguished colleague in the New York Hospital, Dr. R. S. Kissam, he stood perhaps alone in its lucrative practice and in the estimation and confidence of the higher walks of society. He was unrivaled as an anatomist, a most beautiful dissector, and one of the most luminous and perspicuous teachers I have ever listened to either at home or abroad. His manners were grave and dignified; he seldom smiled, and never trifled with the serious and responsible duties in which he was engaged, and which no man ever more solemnly respected. His delivery was precise, slow and clear, qualities inestimable in a teacher, and peculiarly adapting his instructions to the advancement of the junior portion of the class. He was one of the first American pupils (preceding Dr. Physick) of the celebrated John Hunter, of London, from whose lips and those of Mr. Sheldon he imbibed those principles of practice which he afterwards so ably and usefully applied.

Very probably the best way to appreciate a surgeon's feelings with regard to operations and priority in them at this time and their lifesaving effects, will be to quote Valentine Mott's description of Dr. Post's tying of the subclavian artery when that operation had never been done successfully before.

On the second memorable occasion, I had the honor to assist him; it was a case of ligature of the subclavian artery above the clavicle, without the *scaleni* muscles, for an aneurysm of the brachial, involving the axilla. The patient came to me from New Haven in company with an intimate professional friend of mine, the late Dr. Gilbert; the aneurysm was cracked and oozing, and supported by layers of adhesive plaster, by which its rupture was prevented, and life maintained until the time of the operation. The brother of the patient, a merchant of New York, whose family Dr. Post attended, naturally preferred that he should perform the operation, as I was then quite young. To this wish I cheerfully acceded, but lost thus the chance of gaining a surgical laurel for my brow—the operation never having been performed in this country before, and but once in Europe, and then unsuccessfully, by its first projector, Mr. Ramsden, of St. Bartholomew's Hospital, London.

Dr. Francis says of Wright Post, "He blended medical and chirurgical talents to a greater degree than any other of the professors of our art among us. His literary acquirements were slender; his acquisitions in his vocation were of the highest order. He signalized himself as a student in a great calling under John

Hunter, William Fordyce, William Cruikshank and John Selden."

Dr. Post was the first of the distinguished New York professors of surgery who succeeded in winning the devotion and arousing the enthusiastic admiration of his pupils. He has had many successors. It would be easy to think that perhaps students' tastes were not very demanding at the beginning of the nineteenth century, and that their faculty for critical appreciation was easily satisfied. Dr. Valentine Mott, however, who had been all over the medical world of the time and sat at the feet of distinguished teachers in London, Edinburgh and the Continent, said of Dr. Post, as we have seen, that "he was one of the most luminous and perspicuous teachers I have ever listened to at home or abroad."

Following Dr. Wright Post, the names of some half a dozen men stand out in the history of our first half century of surgery after New York became a State. These were Richard S. Kissam, J. Kearney Rodgers, Alexander H. Stevens, John Watson and Valentine Mott and Willard Parker. All came to be very well known by their colleagues, not only throughout the State but the country. All of them were men of exemplary knowledge of anatomy, having devoted much time to special work in dissection, for while not many surgeons could, like Astley Cooper, have bodies provided for them wherever they traveled, in order to keep constantly fresh in their knowledge of anatomical relations, most of them made it a point to spend many hours each year at dissecting work. The latest of these, Valentine Mott, confessed how much he did in this regard in spite of the difficulty of obtaining subjects (See chapter on "The Doctors' Riot") and the others, especially in their younger years, had done the like.

Probably Dr. Wright Post's most distinguished student was Dr. John Kearney Rodgers, who was born in New York, of Scotch ancestors, in 1793. His college studies were made at Princeton, where, according to tradition, he did not do very well. He wakened up, however, when he began the study of medicine, graduating from the College of Physicians, New York, in 1816, though, even before his graduation, he had occupied the position of Demonstrator of Anatomy to Dr. Post. After an internship at the New York Hospital, like all ambitious American students at that time, he went to London, where his interest in plastic surgery was awakened, and he became Edward Delafield and others, a founder of t

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INAUGURAL ESSAY
ON THE
ANTHELMINTIC QUALITY
OF THE
Phascolus Zuratenfis Siliqua hirsuta,
O R
C O W - I T C H .
5766.

Submitted to the EXAMINATION of the
Rev. MYLES COOPER, L. L. D. PRESIDENT,
The GOVERNORS,
And MEDICAL PROFESSORS
O F
KING'S COLLEGE, in NEW-YORK,
For the DEGREE OF DOCTOR in PHYSIC, at the
ANNUAL COMMENCEMENT, MAY 21, 1771.

By SAMUEL KISSAM, M.B.
Phæbe fave, novus ingreditur tua Templa Sacerdos.

NEW-YORK:
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1818 he was made Demonstrator in Anatomy at the College of Physicians and Surgeons, and four years later surgeon to the New York Hospital. Though he was one of the most successful surgeons of his day, his name is largely forgotten because he wrote very little. Like other surgeons of the first half of the nineteenth century, his principal surgical triumph was the ligation of an artery, that of the left subclavian on the inside of the scalene muscles. This had been deemed practically impossible up to this time, and its performance secured an assured place in surgical fame for Dr. Rodgers.

Dr. Richard Kissam began his study of medicine as a pupil of Dr. McKnight, whose account of an operation for extra-uterine pregnancy had been reported in London. (See chapter on "Surgical Specialties.") Kissam himself went to Edinburgh and stayed there some five years, and then returned to practise mainly as a surgeon in New York City. He became famous for the rapidity with which his operations were performed, a very desirable feature of surgical work when patients were not under an anæsthetic. His greatest fame was for his success in lithotomy, and it is said that of sixty-five operations for stone only three proved fatal. He was one of the first in this country to venture to tap ovarian cysts, and in one of these cases nearly six quarts of water were drawn off; the patient afterwards became pregnant without any further trouble from her cyst, and eventually became the mother of five children. He did no writing, so that the details of his surgical career are now but traditions. Dr. Francis mentions with some enthusiasm Kissam's devotion to higher studies, "his fondness for classical pursuits never forsook him; and it was curious to observe the great surgeon, while preparations were being made for him for an operation, to run over an ode of Horace as a mental stimulus for the better accomplishment of his immediate duty."

The most distinguished surgeon of the first half of the nineteenth century here in America was undoubtedly Valentine Mott, of New York. His name came to be known not only throughout this country but Europe, and in his long life of over eighty years he deeply influenced the surgical practice and the medical education of this country. He was born at Glen Cove, Long Island, in 1785, of Quaker parentage. Very early in life he received thorough training in the Greek and Latin classics, and ever afterwards continued to be interested in them. He went to school in Newtown,

Long Island, but never proceeded to college work, though he secured an excellent preliminary education. At the age of nineteen he became an apprentice under Valentine Seaman, the well known surgeon of the time, whose practical interest in nursing at the New York Hospital has given him a place in history. Mott lived with Seaman while taking the usual two courses of lectures at the old Columbia Medical School, and at the age of twenty-one received his degree of Doctor of Medicine.

Then at the age of twenty-two Mott went to Europe, reaching there in the spring of 1807. A group of distinguished surgeons were doing their work in London at this time. Astley Cooper was the most popular of these, and above all, his absolute lack of anything like *chauvinism* made him a favorite for Americans. John C. Warren, of Boston, had recently been with him, and Cooper was quite prepared to find another favorite from America and Mott took the place. Mott had high consideration, moreover, for Abernethy, and often in after life praised him. The young Quaker, straight from the serious influences of home, applied himself very strenuously in London, and seems not to have been in touch much with any of London life except its medical side and even in that limited himself largely to the surgical aspects of its teaching. After a year in London he went to Edinburgh, a smaller town with a rather intense literary life at this time, and where it was almost impossible for even a devoted medical student not to be brought in touch with some of the literary impulses. Walter Scott, Jeffreys, the critic, Sidney Smith, Kit North, and others, were all in Edinburgh at this time, and young Mott was brought in contact with them. No wonder then that his literary tastes were reawakened and that he enjoyed the life at Edinburgh very much.

When Mott returned to New York to take up his life work he was fortunately so situated that he did not have to set himself to earning a living as best he might, but could devote himself to what he found most interesting. He began his career by giving a course of private lessons on surgery which attracted a great deal of attention, so that the next year he was invited to be a lecturer on surgery in the Columbia School. The year following, Columbia was united with the College of Physicians and Surgeons, which had been established in 1807 as a department of the University of New York. The two weak schools were combined, and Valentine Mott became Associate Professor of Surgery, his colleagues on the

faculty being such well known men as Dr. Samuel Bard, Wright Post, Samuel L. Mitchill and John W. Francis. How much Mott meant as a teacher of medical students in New York will be very well appreciated from the fact that he continued to teach for more than half a century, and had a most varied career as a surgical teacher. He loved teaching as all born teachers do, he prepared his lessons well, he had a number of private pupils, and he inspired a number of the younger men around him with the desire of doing good work of an original character.

Dr. Mott continued to teach in this reorganized school until, in 1826, the medical faculty rebelled as a unit against persistent unfortunate attempts to rule medical education from a lay standpoint, made by non-medical trustees, and resigned in a body. They then proceeded to found an independent medical school in New York as a department of Rutgers College of New Brunswick, New Jersey. After five years of precarious legal status, though successful medical school work, the illegality of thus issuing degrees in New York under a New Jersey charter brought about the extinction of the school, and Mott returned to the College of Physicians and Surgeons as Professor of Operative Surgery. He continued to hold this position until 1835, when he resigned on account of ill health, and when he returned five years later was elected Professor of Surgery and President of the Medical Faculty in the University of the City of New York, which had just before opened a medical department. He resigned in 1850 to go to Europe once more, and on his return was made Professor of Operative Surgery and Surgical Anatomy in the College of Physicians and Surgeons, which he held for two years, and then became Emeritus Professor of Surgery, lecturing annually until his death in 1855.

Mott gained an excellent practice, attracting attention everywhere by his handsome personal appearance and genial ways. He was known as "the handsome young Quaker doctor." After eight years of practice he was appointed attending surgeon to the New York Hospital, his colleagues on the staff being Wright Post, his former teacher, Richard S. Kissam and Alexander H. Stevens. The year after his appointment, Mott performed the operation which gave him prestige on both sides of the Atlantic. This was the ligation of the innominate artery. The operation was undertaken for the cure of an aneurism of the brachial artery in a sailor. He found the brachial artery, as far as he could trace it, so diseased

that he judged it incapable of holding a ligature, and, carrying the dissection deep into the chest, ligated the innominate itself. The ligature was tightened very slowly, for, of course, the effect of thus encroaching so materially on the circulation to the brain was feared. So far as any effect on the nervous system was concerned, however, everything went well and the artery was finally tied. The patient lived twenty-five days, and then died of recurring hemorrhages. In spite of this failure, the operation made Mott famous. The difficulties of the operative procedure will be better realized if it is recalled that the patient was not under ether, and that the surgeon must work rapidly and yet confidently and surely among some of the most important structures of the body. In the meantime his patient was in terrible agony, perfectly conscious of what is being done, time could not be taken to stop hemorrhage as completely as was desirable, and the surgeon must complete his work without delay and without time for further consideration. What is surprising and shows Mott's capacity is, that though comparatively a young man he ventured to go so far beyond what he had originally planned. As soon as he found that this would not save his patient, he boldly went on to a procedure which had never been attempted before.

Such operations were well attended, being announced for some days beforehand, and a number of prominent members of the medical profession were present at Mott's operation. All of them gave the young surgeon credit for readiness, thorough knowledge of the anatomy of the parts and the surgical relations, and for nerve in the face of a real setback to his original plans which gave him the opportunity for the display of his surgical resourcefulness.

Mott tied a number of other arteries after this, among them the common iliac—the second time this was ever attempted, and Mott's patient was the first one to survive, and had many cases of ligature of the subclavian, the common carotid, the internal iliac, the femoral and the popliteal. Altogether he had the ligation of 132 large vessels to his credit, and it was said that no surgeon had ever tied so many. For the next twenty years Mott continued to be looked up to as the most prominent surgeon in New York. Then, broken in health, he went to Europe and was the subject of a good deal of honor from the European surgeons. He was received everywhere by the leaders of the profession, Astley Cooper



VALENTINE MOTT

in London, Baron Larrey, Napoleon's great surgeon, then surgeon-in-chief to the Invalides, the hospital for Napoleon's old soldiers, from there he went to Berlin to be received by Dieffenbach and continued his travels through all the European countries, including Turkey. At Constantinople he removed a wen from the Sultan's head which the court physicians had been afraid to touch. The Sultan made him a Knight of Medjidichi, his Turkish knighthood being a subject of no little amusement to his professional colleagues at home when he returned to America.

One of the very well known surgeons of the first half of the nineteenth century was Alexander Hodgdon Stevens (1789-1869). His college education was received at Yale, and he received his degree of M.D. in 1811. At the breaking out of the war he went to Europe as a dispatch bearer, but was captured by an English man-of-war and detained a prisoner at Plymouth, England. After his release he attended the lectures of Abernethy and Astley Cooper, and then went to Paris, where he served as an interne under Boyer. He afterwards translated his French Professor's clinical lectures into English. On his voyage home he was once more captured but was not long detained, and on his arrival in New York secured an appointment as an army surgeon, a post which he continued to occupy so long as the war lasted. For the next ten years he was in active surgical practice in New York as a surgeon to the New York Hospital and as a Professor of Surgery, insisting on the value of bedside instruction. In 1825 he visited Great Britain again, and Liston at Edinburgh and Lawrence at St. Bartholomew's asked for his advice in difficult cases, and more than once accepted his opinion when it differed from theirs, to find that the outcome justified Stevens' diagnosis.

Stevens had all the honors of the profession conferred upon him. He was president of the State Society, president of the American Medical Association, one of the founders of the New York Academy of Medicine, subsequently its president; president of the College of Physicians and Surgeons, and was generally looked up to as perhaps the best representative of the medical profession in the city. During the cholera epidemic, from which New York suffered so severely in 1832, with a number of other physicians, Stevens stayed, though most of the inhabitants who could possibly get away fled from the city. He devoted himself to the care of

those stricken with the disease and thus won precious reputation among his fellow citizens.

An untimely death deprived New York of a very promising teacher of anatomy and surgery when John D. Godman (1794-1830) died at the early age of thirty-six. He was one of our very early medical journalists in this country, having established the *Western Quarterly Reporter* in Cincinnati during a comparatively short stay in that city. Though it survived but for six numbers it contains some three hundred pages contributed by Dr. Godman himself, and this gives the best ideas of his industry and enthusiasm as a writer. He was entirely a selfmade man, his father and mother having died in his early boyhood, and he had to work for his living from early years, the hard times of the War of 1812 compelling him even to enlistment in the navy as a resource for a livelihood, yet, after a time, in spite of every obstacle, he succeeded in obtaining a medical education. He attracted attention by his thoroughness, so that when scarcely more than twenty-five he was offered by Daniel Drake the chair of Surgery in the Medical College of Ohio. When that college went to pieces he was offered the chair of Anatomy in Rutgers College, New York, and succeeded in attracting large classes. Gross speaks of his "accomplishing an immense amount of work, breathing as he did with only one lung and living a life of true heroism." The infectious example of his enthusiasm for anatomical work made itself felt among his students. If the Rutgers Medical School incidents did nothing more than bring to New York this inspiring teacher, they would deserve not to be forgotten. After a single year of work he had to give up and go south for his health, and died the following year.

Shortly after the middle of the nineteenth century, New York had a group of professors of surgery whose personalities attracted many students. "Jimmie" Wood, as his students affectionately called him, was particularly attractive in his ways, thoroughly practical in his teaching, and deserves the name of the father of clinical instruction in surgery in this country which has been given him for his work in opening Bellevue to students. Scarcely less popular was his colleague Van Buren, of whom most of us recall the enthusiastic praise of his students. He finds a place in the chapter on "Surgical Specialties," in the section on genito-urinary surgery. Carnochan was a rival in popularity with the stu-

dents, and New York owes to him a debt of gratitude for having called attention to the possibilities for teaching purposes of the immigrant hospital on Ward's Island. With these men the new era of clinical teaching was dawning, and American medicine was waking up to the necessity for that bedside instruction so indispensable if the medical student is really to learn his medicine before he begins practice, and not afterwards at the expense of his patient. Each of these men deserves special consideration.

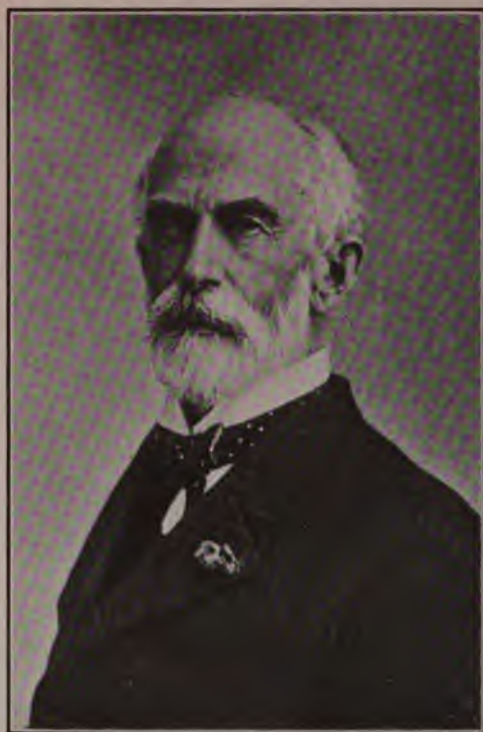
One of New York's distinguished surgeons of the mid-nineteenth century and afterwards was John Murray Carnochan, born in Savannah, making his medical studies, as so many enterprising Southern medical students did, abroad, mainly at Edinburgh, but receiving his degree in medicine from the College of Physicians and Surgeons, New York, in 1836, and afterwards spending several years in further European medical studies. For twenty-five years he held the position of surgeon-in-chief of the Emigrant Hospital on Ward's Island, which was then the largest hospital in the United States. He was an enterprising surgeon, a bold and skilful operator who did not hesitate at any difficulties, and who weighed well the chances and gave his patients the benefits of all doubts. He was the first surgeon to remove the entire lower jaw in one operation, an operation which he described in his monograph, "Amputations of the Entire Lower Jaw, with Dislocation of Both Condyles" (New York, 1852). He also exsected the entire ulna and the entire os calcis, operations which he described in papers published by him (New York, 1854-57). He was one of the last of the surgeons to get fame by the ligation of an artery, for in March, 1851, he ligated the femoral artery just below the origin of the *arteria profunda* for the cure of true elephantiasis of the leg, which had proved intractable to every other method of relief. The patient recovered, and even years afterwards was reported as well. Probably Dr. Carnochan's greatest service to the surgery of his time and of the future was his bold operation for neuralgia of the fifth nerve, known then as *tic douloureux*. It has been described thus:

Dr. Carnochan was the first to perform the operation of exsecting the superior maxillary nerve for the cure of facial neuralgia, his operation being made on the 16th of July, 1856. He trephined the superior maxilla just below the inferior orbital foramen, removed the nerve from its groove in the orbital plate and divided it at its exit from the foramen

rotundum, at the same time removing Meckel's ganglion, which he maintained was essential to the success of the operation. During the next three or four years he made at least three similar operations.

A very important teacher of surgery in New York and a man whose name deserves a place in the history of American Medicine is James Rushmore Wood. Some of his work, especially on the periosteal reproduction of bone, brought him an international reputation. Langenbeck, the well known German surgeon, suggested with regard to a specimen of the regeneration of the lower jaw sent by request for exhibition at the Surgical Society of Berlin, that he did not believe another such specimen was in existence. New York owes him a debt of gratitude for his energetic campaign with other teachers of anatomy and surgery to secure for dissecting purposes "the bodies of all vagrants dying unclaimed." American surgery owes him much for having helped to transform Bellevue from an almshouse into a hospital, and then initiating clinical lectures on surgery which attracted wide attention. After some years this led to the foundation of Bellevue Hospital Medical College, and to the introduction of the clinical teaching of surgery into the other medical schools throughout the country. As a young man he taught at Castleton College, in Vermont, where he graduated, but his lifework was done as the Professor of Operative Surgery and Surgical Pathology at Bellevue.

Willard Parker was another of our many distinguished New York surgeons who owed their opportunities for an education to their own efforts. He came of Puritan stock, and was born in Francistown, New York, in 1800. He worked on his father's farm, paid his own way through Harvard, graduating there in 1826 and receiving his M.D. from there two years later. He was appointed lecturer on Anatomy and Surgery in the College of Physicians and Surgeons the same year, and became famous for his ligature of arteries. He tied the subclavian five times, once within the scaleni muscles. He originated the operation of cystotomy for irritable bladder in 1850, and opened a perityphlitic abscess which was undoubtedly of appendicitic origin. His medical writing was practically all for medical journals, but he came to be looked upon as one of the most enterprising yet conservative and thorough of New York surgeons. He was an active member of our medical societies, and made many cordial professional friends. Though he



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lived to eighty-four, he continued to be deeply interested in medicine, and practically died in harness.

A New York surgeon whose name is enshrined in medical history because of his invention of an apparatus for facilitating extension of the lower limb in surgical cases is Gurdon Buck (1807-1877), the inventor of Buck's extension. He was born in New York City, received his medical education in the College of Physicians and Surgeons, but like so many others who made a success in New York, had the advantage of several years of study in Paris, Berlin and Vienna. During the third quarter of the nineteenth century he was looked upon as one of our leading operators in New York, and he published a series of papers on various surgical questions which attracted wide attention and represent rather fully the surgical problems of the time and the attempts at their solution that were made by his contemporaries. He gave particular attention to the surgery of the upper air passages, and treated all manner of difficult conditions in connection with that crux of surgery, the larynx, so that he has an important place in the section on laryngology of the chapter on "Surgical Specialties." His invention of the mode of extension which bears his name shows his thoroughly practical character.

One of the most distinguished of our New York surgeons was Dr. Frank H. Hamilton, a student of the Western College of Physicians and Surgeons at Fairfield, and later a graduate of the University of Pennsylvania. He became a Demonstrator of Anatomy at Fairfield, and held the lectureship there in anatomy for several years. In 1839 he was Professor of Surgery at Fairfield, and the following year at Geneva Medical College. He resigned to take up practice in Buffalo, but after only three years of practice spent nearly a year in Europe getting in touch with the great teachers of surgery there. In 1846 he, with Dr. Austin Flint, Sr., and Dr. James Platt White, founded the medical department of the University of Buffalo, Dr. Hamilton being the Professor of Surgery. Here he remained for twelve years and then moved to Brooklyn, where just before the Civil War he became the first Professor of Surgery in Long Island College. In April, 1861, he became Professor of Military Surgery and of Fractures and Dislocations at the Bellevue Hospital Medical College, but this did not prevent him from serving for two years as a medical inspector of the United States army. In 1868 he succeeded Dr. James R. Wood as

Professor of the Principles and Practice of Surgery at Bellevue. His finest original work is his report to the *American Medical Journal* on deformities after fractures, which was of great practical value in the prevention and treatment of these unfortunate conditions. His treatise on fractures and dislocations went through several editions, as did also his treatise on military surgery and hygiene. His treatise on the "Principles and Practice of Surgery," issued originally in 1872, continued to be published until the end of his life, the last edition appearing a few weeks before his death in 1886. He edited the "Surgical Memoirs of the War of the Rebellion," which was published under the direction of the United States Sanitary Commission. His professional brethren had conferred upon him nearly every important medical distinction. He was a presiding official in a number of medical societies, was the president of the New York State Medical Society and the vice-president of the New York Academy of Medicine. He was one of the consultants in the case of President Garfield, and his account of the President's case is a classic in history.

One of the important influences in surgical life in New York toward the end of the pre-Lister period was Dr. Ernest Krakowicz. New York owed his presence here to the revolutions in Europe in '48 which sent so many enterprising men to our shore. Krakowicz had been a faithful student of pathology under Rokitsky, and subsequently an assistant of Professor Schuh in surgery. He was finely trained then for thoroughly scientific progressive surgery. He was probably the best grounded pathologist in New York in his time, and his knowledge was often appealed to by his colleagues. He came to be a very well known surgeon, whose operations were watched by a number of surgeons from New York and vicinity, and who left a deep impression on those at least immediately in contact with him.

CHAPTER XII

THE SURGICAL SPECIALTIES

NEW YORK holds a very significant place in the history of the modern development of the surgical specialties. In nearly every one of these important recently developed phases of surgery of special parts of the body, New York has been a pioneer, and that not only as regards this country but sometimes also as regards the medical world. For not a few of our New York surgeons did groundbreaking work in these specialties which laid the foundation of far reaching surgical developments for the benefit of suffering humanity, that had hitherto seemed out of the range of surgical intervention. To attempt to give the story of all the details of their history would take far more space than could be afforded here. Books might well be written about each of them and have been with regard to some of them, but certain of the most prominent features of this very significant phase of achievement in the history of modern surgery must have a place, as well as short sketches of the careers of the men who did the best work.

OPHTHALMOLOGY

The treatment of the eye, in the earlier days of our history, was not considered a specialty, but was in the hands of regular physicians who had a special liking for surgery. With the growth of the knowledge of eye diseases, however, and especially of the surgery of the eye, it came to be recognized that ocular affections were so important that they deserved the special skill and treatment of one who devoted himself to this department exclusively. Above all it was recognized that eye patients should have quarters by themselves. The New York Eye Infirmary was established then through the efforts of Edward Delafield and John Kearney Rodgers, in 1820. It was probably not the first establishment of this kind in this country, for in 1817 Dr. Elisha North had opened an eye infirmary in New London; it was, however, New York's

special provision for this class of cases which attracted general attention and aroused imitation. In 1821 an institution similar to the Eye Infirmary of New York was founded in Philadelphia. In 1823 an eye department was organized in connection with the Baltimore General Dispensary, and one of the four wards of the newly completed Baltimore Infirmary was devoted to diseases of the eye. In 1824 the Massachusetts Eye Infirmary was founded, and Will's Eye Hospital in Philadelphia in 1830.

New York physicians had been particularly interested in the eye before this, however, and gave special attention to the problem of accommodation. In April, 1813, Dr. Hosack published a paper in the *American Medical and Philosophical Register* (New York), in which he suggested that the external muscles of the eye are responsible for the changes in the eyeball that produce accommodation. In 1831 Dr. H. Morton, of New York, in a paper on "The Adaptive Powers of the Eye" (*American Journal of the Medical Sciences*) tried to show that the focal adjustment was produced by the action of the iris in contracting and dilating the pupil. In 1835 Dr. William C. Wallace, of New York, made numerous dissections of the eye and a minute study of the ciliary body both in man and animals, and came to the conclusion that the adjustment of vision was accomplished by the action of the ciliary muscle. He thought, however, that this changed the position of the crystalline lens farther from or nearer to the retina, but had he noted curvature changes in the lens he would have anticipated Helmholtz by many years.¹

Dr. Alfred C. Post of New York was the first in America to perform successfully plastic operations for the correction of deformities of the eyelids resulting from cicatrices. His first account of his operation for ectropion was published in the *New York Medical Gazette*, January 19, 1842. His example and mode of operating was imitated not long afterwards by Warren, of Boston, and McClellan and Mütter, of Philadelphia, as well as others.

One of the lights of New York ophthalmology, though he never limited his practice to that specialty, was Edward Delafield (1794-1875), to whom we owe the foundation of the New York Eye Infirmary, one of the first institutions of its kind in this country. He is also one of the founders of the American Ophthalmological Society and was its first president. He was the founder of the New

¹Hubbell, "Ophthalmology in America."

York Society for the Relief of Widows and Orphans of Medical Men, his experience having shown him how often help was needed for them. The organization which has done so much good, and is now in condition to continue its benefits, owes its origin to Dr. Delafield's constant purpose to relieve suffering wherever he could. Though pursuing the specialty of diseases of the eye, Dr. Delafield continued to practise in another chosen field, obstetrics and the diseases of women and children, and he held the chair in these subjects at the College of Physicians and Surgeons.

The foundation of an American ophthalmological association was first suggested in correspondence between Dr. Henry D. Noyes, of New York, and Dr. F. J. Bumstead and Dr. Haskett Derby, of Boston. A preliminary meeting was held at the office of Dr. Henry D. Noyes, 278 Fourth avenue, New York City, January 9th, 1864, at which were present Dr. Henry Sands, Dr. Herman Althof, Dr. John H. Hinton, Dr. S. J. Bumstead, Dr. D. B. St. John Roosa, Dr. W. F. Holcomb, Dr. Henry D. Noyes, all of New York, and Dr. Haskett Derby, of Boston. They issued a call for a meeting of ophthalmologists from all over the country in New York City at the time of the annual session of the American Medical Association in the same place. A group of ophthalmologists assembled in accordance with this call, June 7th, 1864, at the New York Eye Infirmary, and organized, electing Edward Delafield as president, and Henry D. Noyes as secretary.

The first journal of ophthalmology in America was published by Dr. Julius Homberger, who had been a pupil of Von Graefe and Sichel, and settled in New York to practise shortly after 1860. This was known as the *American Journal of Ophthalmology*, and the prospectus announced that it would be a quarterly, with forty-eight pages each number. The first number was issued in July, 1862. Six numbers were published between that date and May, 1863, and constituted the first volume. The second volume was begun in January, 1864, but the *Journal* was discontinued after the second number of this year. It was not representative of American ophthalmology as a publication, and mainly consisted of translations from articles published abroad, with original articles by the editor.

In his volume, "Ophthalmology in America," to which I owe many of these details, Dr. Hubbell quotes a letter from Dr. Haskett Derby with regard to the foundation of the American Ophthal-

mological Society that is of interest in connection with Dr. Homberger's *Journal*. Dr. Derby wrote:

The actual founder of the Society was Dr. Julius Homberger, as I used laughingly to assert to Dr. Noyes' great indignation. About 1862, a peripatetic German adventurer of this name came to New York to engage in ophthalmic practice, and started a magazine of ophthalmology. After a few numbers this probably fell stillborn, but while it lasted it disgusted reputable ophthalmologists, and the meeting called by Dr. Noyes, after consultation with me, was really to concert measures for the establishment of a magazine that should be respectable. Eight of us came together at Dr. Noyes' office in Fourth avenue, and after well weighing the matter decided that a society would be a better thing to found than a magazine. So we issued a call for a meeting and held it (the first) June 7th, 1864. Thus we originated. Whatever became of Homberger, I have no means of knowing. The Germans have a word "verschollen" which probably applies to him.

While the American Ophthalmological Society at its first meeting agreed that a *Journal of Ophthalmology* was a desideratum, they thought that the medical profession in this country was scarcely ready to afford proper support to such a publication as yet. Only a few years later, however, in 1868, Dr. Herman Knapp, a pupil of Helmholtz, who had been a professor at the university of Heidelberg, came to this country and in the following year he established his *Archives*, which, "with a maintenance of its high and scientific ideals and standards, has proved to be a most powerful engine of ophthalmologic progress in this country." (Hubbell.)

The ophthalmology of America probably owes more to two New York surgeons, Cornelius R. Agnew and Hermann Knapp, than to any others. Agnew was one of the founders of the American Ophthalmological Society in 1864, and later the president of that organization for five years. Rather extensive studies made in Europe (Dublin, London and Paris), for the Teutonic countries were not as yet attracting English-speaking medical students, prepared him for his life work. On his return he became a surgeon in the New York Eye and Ear Infirmary, and later the Professor of Ophthalmology and Otology in the College of Physicians and Surgeons of New York. While Dr. Agnew applied himself with unwonted assiduity to his specialty and did much to develop the operative technique of it and work out the details of the treatment of special affections, he was in no sense of the word a narrow specialist. On

the contrary, his interests were very wide and he held many public positions. His work at the outbreak of the Civil War gave him a place in public estimation that he continued to hold, justifying the high opinion of his fellow-citizens by his work for the benefit of the community.

One of the most important contributors to ophthalmology in New York was Dr. Edward Loring, who just before he was thirty became the associate in New York of Dr. C. R. Agnew, and soon came to take a prominent place in the ophthalmology not only of the city but of the country. He wrote much and summed up many of his contributions to his specialty in his text book on "Ophthalmoscopy," published in 1886. His modification of the ophthalmoscope made that instrument ever so much easier of application than before, and even encouraged its use among neurologists and others who were not specializing in diseases of the eye, to the great advantage of general diagnosis. His work and invention came to be known throughout the world and placed American ophthalmology on a high plane of practical science. His death at the early age of fifty-one of angina pectoris was a distinct loss to American medical science, for he was just entering on a career which promised still more important contributions to his favorite subject.

The last quarter of the nineteenth century saw two very significant developments in ophthalmology in New York City. One of these was the discovery (in 1884) by Dr. Karl Koller of the value of cocaine as a local anæsthetic for eye surgery. Almost needless to say, this represents one of the most important practical developments in eye surgery that have ever been made. It has greatly broadened the field of operative work as well as facilitated ophthalmologic practice in many ways. It has done away with the dread sequelæ following operations upon the eyes as a consequence of vomiting subsequent to general anæsthesia. The extension of the discovery to laryngology and rhinology has proved as significant for these specialties as for ophthalmology. Its use as a local anæsthetic simplified a number of superficial operations throughout the body, and even made possible a number of deeper operations in cases where complications of various kinds added seriously to the danger of general anæsthesia.

The other important ophthalmological discovery was that of the bacillus of acute catarrhal conjunctivitis of the epidemic form

which is the microbic cause of the familiar "pink-eye." This discovery was due to Dr. John E. Weeks, of New York, who isolated the organism since known as the Koch-Weeks bacillus. This discovery has made it possible to recognize definitely the early cases of this affection so as to allow of such segregation as will prevent to a great extent at least the spread of the infection. Investigation made it very clear that the disease spreads not through the air as an infection, but as a real contagion due to actual contact with secretion from a preceding case.

LARYNGOLOGY AND RHINOLOGY

New York had much to do with the development of the specialty of laryngology, not only for this country but for the medical world. The name of Dr. Horace Green probably must be considered as that of the founder of this specialty in America, and his work had much to do with the creation of modern interest in laryngology. Elsberg says in "Laryngology in America" (Trans. Amer. Laryng. Ass'n, 1879): "The specialty of laryngology as a distinct part of regular medical practice seems to have originated in America, Horace Green being the first, at all events in recent times, who devoted himself to throat and respiratory diseases. Dr. Kelly in the Introduction to his Cyclopedic of American Medical Biography, says of him: "The career of this great man marks him as one of the pioneers of his time, a contemporary and friend of Trousseau and easily his peer." Dr. Green had the power of observation and the special talent for seeking out the meaning of what he saw. Above all he possessed the brilliant faculty for demonstration that made him a successful leader in the specialty, and this as much as anything else soon served to lift this department to an important place in the medicine and surgery of the time.

Green's first important work which laid the foundation of laryngology as a specialty not only for America but for the world, was done with regard to the chronic laryngitis which has been called "clergyman's sore throat." He has described in his work on "Diseases of the Air Passages" (p. 45) his experience with what he called follicular disease, which he first observed in 1832 in a Boston clergyman. This was while he was practising at Rutland, Vermont, and it seems to have attracted his attention to

throat diseases in particular, for he found that a great many people were suffering from conditions of the upper air passages which required special experience for their recognition, and local treatment rather than, or at least combined with, constitutional remedies. His work soon attracted so much attention that he removed to New York City in 1836, practising there for the next two years. He was not at all satisfied with his own observations, and at the beginning of 1838 he went to Europe in order "to ascertain from the medical *savants* in Europe if any discoveries or improvements had been made by them in the pathology and treatment of laryngeal and pulmonary diseases." In London he first conceived the idea of entering the cavity of the larynx with medical agents.

When he returned to New York in the middle of November, 1838, a clergyman from Rutland, Vermont, who applied to him as soon as he heard of his arrival, was treated by topical applications of nitrate of silver to the pharynx and larynx. These topical applications gradually became stronger, so that from ten to thirty grains to the ounce of water was the application. This was introduced into the glottis by a sponge and probang. His work attracted a great deal of attention, and as he has told us himself, no little misunderstanding from physicians around him. "My patients came from all parts of the world, but with this came also an increase of opposition from my professional brethren. Those who were unfortunate in business or from some other cause were envious of my success. They evinced a very unkind spirit and denied the possibility of my doing what I was doing in my office every day. But I would not quarrel with them, trusting that the truth would ultimately be known, and my word vindicated. For several years now I have heard nothing of this opposition." This prophecy was fulfilled. A committee was appointed to visit the doctor's office and a majority reported favorably. One physician exclaimed: "Well, gentlemen, if Dr. Green says after this that he can put his sponge probang down into a man's boots, I shall believe him!"

Dr. Jacobi says of him that "Horace Green was savagely attacked; one medical society made him resign; the New York Academy of Medicine treated and in part maltreated him, but he was not expelled; and so he suffered the fate that most men have had to endure who have dared to suggest that what was considered impossible might not only be possible but even easy."

This was the beginning of the modern phase of knowledge of

throat diseases but it came appropriately in New York where for long there had been deep interest in the subject. Even in the latter half of the eighteenth century New York physicians had been very much interested in diseases of the throat, especially diphtheria and scarlet fever, then scarcely differentiated from one another, and which were liable at intervals, at that time as well as almost down to our own to work sad havoc among the children of the Colonies. Dr. Elsberg in his "Laryngology in America," the presidential address at the first annual meeting of the American Laryngological Association, June 10th, 1879, reviews (see "Trans. Amer. Laryng. Ass'n," 1879) the contributions on this subject that are worthy of attention.

On October 1st, 1753, Cadwallader Colden, usually known as Governor Colden, wrote a letter to Dr. Fothergill, of London, concerning the Throat Distemper. This was published in the *London Medical Observations and Enquiries*, 1757, Vol. I (p. 211). Colden's interest in the matter was rather academic than practical, and scientifically theoretic, not clinical. He derived most of his observation from Douglass's essay on "An Angina Ulcusculosa, which prevailed in Boston, New England, in the years 1735 and 1736" (Boston, 1736, p. 18). He had, however, learned not a little of the disease also from the physicians of New York.

Some twenty years later Dr. Samuel Bard published a very important essay on diphtheria, the full title of which is "An Enquiry Into The Nature, Cause and Cure of The *Angina Suffocativa*, or Sore Throat Distemper as it is commonly called by the inhabitants of this City and Colony." This was printed by S. Inslee & A. Car, at the New Printing Office in Beaver Street, New York. This pamphlet was dedicated to the Hon. Cadwallader Colden, Esq., His Majesty's Lieutenant Governor of the Province of New York. Dr. Elsberg has quoted the most of this essay in his sketch of "Laryngology in America," and especially Dr. Bard's absolute assurance that mercury properly used would cure the disease. Dr. Bard's essay gives an excellent idea how vigorous was the treatment in those days—calomel to the extent of thirty or forty grains in five or six days to a child of three or four years; a prudent use of oxymel of squills, or lest that should purge, of ipecacuanha given so as to puke two or three times. He quotes Huxham who says, "in children it is often necessary to make them puke frequently with a little oxymel of squills, essence of antimony and the

like, otherwise the vast mass of tenacious mucous would quite choak them."

Two letters of Dr. Jacob Ogden, one written in October, 1769, and the other in September, 1774, were addressed to Hugh Gainé, the New York printer, on the throat distemper, and both were published in the "New York Medical Repository" (Vol. V, page 97). During the Revolution, Dr. Christian Friedrich Michaelis, of Göttingen, who came to New York as Physician General to the Hessians who were fighting for the British during the Revolution, published a book on Croup, entitled "*De Angina Polyposa sive Membranacea*." This was of considerable size, for though only a 12mo it contains over three hundred pages. Fortunately a copy of it was secured for the Library of the Academy of Medicine by Dr. Purple.

In 1780 Dr. Peter Middleton wrote a letter to Richard Bayley which was published as an appendix to Dr. Bayley's letter to William Hunter, by the printer, Hugh Gainé, in Hanover Square, New York. Middleton recommended free jugular venesection, applying a blister over the throat from ear to ear and other evacuants as they were indicated. Dr. Bayley, after summing up his cases, says:

From what precedes it is obvious that the Angina Trachilis is considered as an *inflammatory disease*, the treatment of which must vary in every degree, according to its violence: and though the common anti-Phlogistic treatment will, in some cases, relieve if early applied, yet the most desperate may yield to repeated bleeding *ad deliquium* from the jugulars, the free use of tartar emetic, and other evacuants, with a large blister covering the larynx and aspera arteria, while the mucus filling up the ramifications of the broncha may be emptied by the action of vomiting. In the preceding sheets it has been my object, solely to state matters of fact. Speculative reasoning serves as often to mislead as to instruct. The situation of the patients I have visited may be thought to be particularly described, but as it is my desire to afford every practitioner an opportunity of making his own observations, and deducing his own inferences, I wished rather to appear tedious, than to be wanting in any circumstances which might be thought necessary to that end. A consciousness of the uniform success which has attended the mode of treatment which I have pursued, and which has been happily adopted by others, was my inducement in thus publicly addressing myself to you.

In 1808 Dr. John Stearns, afterwards the founder of the New York Academy of Medicine, wrote in "The Medical Museum" on

Cynanche Trachealis, and makes it very clear that there had begun a definite reaction against the heroic treatment especially by venesection in the disease. Perhaps we might now consider his treatment scarcely less heroic, but what is interesting is that he says that "in the course of several years practice I have found this method of treatment to be uniformly successful." He describes his method as follows:

I have, therefore, long since laid aside bleeding and strong emetics in the cure of this disorder, and place my dependence on calomel, cerated glass of antimony and seneka. The two first medicines, I always give combined in very large doses, and repeat them every six or eight hours, till they complete the cure. They have always succeeded with me when used without the seneka, but since this medicine has been highly extolled by Dr. Archer, I have generally accelerated the cure by administering it in the intervals agreeably to his directions.

Twenty grains of calomel combined with eight grains of cerated glass of antimony, is the dose I generally prescribe to an infant of a year old, when the disease has assumed its most alarming symptoms. This dose will operate two or three times as an emetic, and as often by stool, and will always alleviate the complaint and sometimes effect a cure. If the disorder continues after the operation of this dose, I give the decoction of seneka and at the expiration of every eight hours, repeat the dose until the cure is complete.²

In the first half of the nineteenth century, before the invention of the laryngoscope, there had been some excellent studies of medical and surgical details of throat diseases in New York besides

²It may be well as a commentary on the extreme New York practice on diphtheria to note the treatment of the first President of the United States when a sufferer from it, for it was from *cynanche trachealis* that Washington died. A description of his case is briefly: "The disease commenced with a violent ague accompanied with some pain in the upper and fore part of the throat, a sense of stricture in the same part, a cough and a difficult rather than a painful deglutition which was soon succeeded by fever and a quick and laborious respiration. Speaking became painful and finally impossible without a struggle, and he died in twenty-four hours after being attacked. The first physician who saw him had him bled twelve to fourteen ounces. Consulting physicians were called in and frequent bleedings followed until he had lost some ninety ounces of blood. Vapors of vinegar and water were inhaled, ten grains of calomel were given, succeeded by repeated doses of emetic tartar, blisters were applied to the extremities and a cataplasm of bran and vinegar to the throat. No wonder that J. Reid, a London physician, in reviewing the above account concludes that the general was bled and doctored to death."

Green's pioneer work. Among these especially noteworthy is Gurdon Buck's first epochmaking paper upon Edematous Laryngitis and its treatment by scarification. Buck was a general surgeon, better known in our time for the apparatus and mode of treatment known as Buck's extension, for the proper reposition of fractures of the thigh by the weight and pulley, but he was a very careful surgical student, thinking for himself, who worked out the problems that came to him in an individual way. Edema of the glottis may readily cause suffocation and death unless immediate relief is afforded. Dr. Buck suggested then the making of a series of incisions in the mucous membrane of the vocal cords in order to relieve the edema and prevent suffocation. His operation still has its place in surgery.

During the decade 1850-1860 there were a series of important papers on subjects relating to the mouth and throat and nose published in New York, and the interest in this part of the body was deeply aroused. In the early fifties these papers are mainly from Horace Green, but in the later fifties a number of others became interested in the specialty. In 1858 Dr. Ernest Krakowiezer procured a laryngoscope from Vienna and began demonstrations with it to New York physicians. He modified the head mirror as it had been fashioned by Semeleder, and was probably the first physician in America to demonstrate the vocal cords. Dr. Horace Green took up the use of the instrument with enthusiasm and predicted that "if it could be brought into general use the profession would be able to cure diseases which are now too frequently overlooked," a prophecy which has been amply fulfilled. It was not long before American inventive ability improved the laryngoscope in various ways, and above all simplified it and made it much easier of general application.³

³How much the idea of the laryngoscope was in the air at this time—that is, of some instrument that would make it possible to view the vocal cords and the general condition of neighboring structures—can be best appreciated from the story that Dr. Jacobi has told of his own experience in the matter. A patient came to him suffering from an imaginary condition of the throat, but thoroughly persuaded that a definite pathological condition was developing there. By a combination of mirrors Dr. Jacobi tried to show him that his persuasion in the matter was a delusion, and in the course of his experiments for this purpose actually did succeed in securing a certain amount of view of throat structures not ordinarily vis-

The first public clinic for throat diseases was established in New York by Dr. Louis Elsberg, shortly after his return from Vienna, where he had studied under Czermak. He was also the first to lecture on laryngology and to establish a laryngological clinic for demonstration purposes in connection with his teaching under the auspices of the New York University Medical College. Dr. Elsberg himself, in his "History of Laryngology in America," published in the first volume of the "Transactions of the American Laryngological Association," claimed that this was the first public throat clinic in America, and probably in the world. Everywhere this specialty soon attracted attention, and before the end of the sixties Dr. Woolsey Johnson was appointed Clinical Lecturer on Laryngology in the College of Physicians and Surgeons in New York, where in the early seventies he was succeeded by Dr. George M. Lefferts. The department of Laryngology at the College of Physicians and Surgeons came to be during the course of the next ten years one of the best organized and most perfectly equipped of its kind in this country or in Europe. In the introduction to the "Cyclopedia of Medical Biography," (Kelly) it is said that "no other clinic compared with it in the completeness, thoroughness and impressiveness with which instruction was carried out." When the New York Polyclinic and New York Post-Graduate Schools were organized for the instruction of graduates in medicine, the department of laryngology became an important feature of each of them.

In 1873 interest in laryngology had become such a prominent feature of medical life in New York City that it was felt that those particularly devoted to the subject would find sympathetic opportunities for advance in knowledge by meeting at regular intervals. Dr. Clinton Wagner, of New York, called a meeting then of those who had given special attention to the subject and who held positions in throat clinics in New York City. At this meeting there was organized the Laryngological Society of New York. This was the first society devoted exclusively to the consideration of

ible. Had he pursued his investigations or realized the general application and extreme desirability of the sort of apparatus that he was trying to fashion, he might very well have come down in history as the inventor of the laryngoscope, for his experiments were made before that instrument had as yet been heard of.





JOHN W. FRANCIS

diseases and scientific knowledge with regard to the nose and throat established anywhere in the world. There are, I believe, no records of any laryngological society even in Europe that was founded earlier than this. Some twenty years later this New York Laryngological Society became the section of Laryngology and Rhinology in the New York Academy of Medicine, so that it has an uninterrupted history now of well above two score years.

New York State was also to have the honor of affording a place for the first meeting of a national laryngological association, for five years after the establishment of the New York Laryngological Society a group of men interested in throat and nose work met in Buffalo, in June, 1878, and formed the American Laryngological Association. This was the first national association of laryngology in the world, and retained this unique position for more than ten years. Almost needless to say, the good example thus given has been followed in Europe, but it is interesting to note that the other English-speaking country, owing to the influence of the growing American literature on the subject, organized considerably in advance of the other countries of Europe. The volumes of the "Transactions of the American Laryngological Association" have appeared with regularity ever since, and though for nearly twenty years now there has been a rival in the American Laryngological, Rhinological and Otological Society, the pioneer organization continues its work.

The first complete method for photographing the human larynx came in 1886, from Professor Thomas R. French, of Brooklyn. Any patient whose larynx or pharynx could be demonstrated might be photographed by the method which he invented. It represented a development of distinct value for the teaching of laryngology, but also for the benefit of the patients themselves since it led to the recognition of minor deviations from the normal that might be of definite pathological significance.

There were other phases of laryngology which add to New York's fame and deserve a place in history. Probably the most important development in this subject ever made was that of Dr. Joseph O'Dwyer, of New York, who invented intubation. His merit consists not in having devised a set of tubes and the instruments for intubation and extubation of the larynx, but was much more than that. He had first to overcome the worldwide prejudice that the larynx would not tolerate a foreign body; there had been cer-

tain hints of this arrived at by various students of troubles of the throat and nose, but most even expert laryngologists would have declared at once, if asked, that it would be useless to think of having a tube remain in the larynx indefinitely so as to facilitate breathing. O'Dwyer went on and did it, and then it was simple. Long years of experiment were needed in order to work out the form of the tube best adapted for the purpose, and then the instruments and method for inserting and extracting them. As a result of this successful work O'Dwyer must be looked upon as one of the great medical inventors of America.

In rhinology, New York has quite as many definite advances to her credit as in the related subjects of laryngology. The subject of mouth breathing particularly and the necessity for proper provision for nasal breathing was one of the principal subjects of study and progress in New York. The Jarvis snare, invented in order to remove the nasal obstruction consequent upon enlargement of the turbinate bodies, represents an important discovery and an equally important invention. After this Dr. Bosworth called attention to the importance of spurs upon the nasal septum as factors in causing obstruction to breathing, and he invented a saw for the removal of these spurs. This was a similar recognition of a pathological condition and a devising of means to overcome it. This was important not only for the nose itself, but also for the upper air passages generally, for the protection of the ear from various chronic inflammatory developments, and also the general system in so far as nasal obstruction and mouth breathing often hamper development or prevent the enjoyment of good health.

OTOLOGY

New York was fully as prominent a pioneer in the cultivation of otology in the United States as in the related specialties, laryngology and ophthalmology. When the New York Eye Infirmary was opened in 1820, it was found advisable and convenient to treat cases of ear diseases in the same institution. At the beginning there were not many of these, but in the middle fifties some four hundred patients with diseases of the ear occur in the annual reports. The same surgeons treated both eye and ear cases until 1864, when application was made to the legislature to change the title of the institution to the New York Eye and Ear Infirmary.

Two special aural surgeons were then appointed—Dr. John A. Hinton, and Dr. D. B. St. John Roosa. Its first year, nearly one thousand cases were treated. In 1871 the number of new cases had reached nearly two thousand, in 1882 there were three thousand, and the number rose rapidly as the result of the grippe epidemic toward the end of the nineteenth century, until at the beginning of the twentieth century over ten thousand cases were treated each year. Shortly after the establishment of the special Ear Department, the names of Dr. Robert F. Weir, Dr. Charles E. Hackley and Dr. Albert H. Buck appear as aural surgeons.

Other institutions soon followed. The Manhattan Eye and Ear Hospital, chartered May 5th, 1869, opened a daily clinic for the gratuitous treatment of the poor, and during the next ten years the number under treatment increased so much that a new building on Park avenue and 41st street was completed. In 1869 also the New York Ophthalmic and Aural Institute was incorporated and began its work. In 1871 the New York Ear Dispensary was opened for the reception of patients. This represented an organization of opportunities for the practice of specialists in ear diseases, as well as of facilities for the treatment of the poor, such as no other American city possessed, and probably no city in the world.

The whole subject of otology took on increased interest toward the end of the seventh decade of the nineteenth century, and so it is not surprising that on July 22nd, 1868, a meeting was called for the formation of the American Otological Society. The American Ophthalmological Society had proved itself a useful organization and had become firmly established. The question of amending its constitution so as to admit of the discussion of aural subjects was considered by the members, nearly all of whom were engaged in the practice of ophthalmology and of otology. It was proposed to devote one day of the annual session of the society to aural medicine and surgery; but it was finally decided that such a union could not produce satisfactory results. At the meeting of the American Ophthalmological Society in Newport in 1868, certain members of that society met to organize the American Otological Society. New York's interest in it will be recognized from the state's majority among the organizers, who were Drs. C. R. Agnew, H. D. Noyes, D. B. St. John Roosa, F. J. Bumstead, Oren D. Pomeroy, all of New York City; Dr. John Green, of St. Louis; Dr. E. Williams, of Cincinnati; Dr. C. A. Robertson, of Albany; and Dr. C. E. Rider,

of Rochester. Dr. Williams was elected president for the ensuing year, and it was decided to meet at the Ocean House, Newport, July 20th, 1869, at 11 a.m.

Above are the names of the men who were prominent in the development of otology in this country, and the New Yorkers out-ranked the others in importance. The two men to whom the specialty owes the most in this country at the beginning, were Roosa and Agnew, though the following year Dr. Herman Knapp became a member and lent his weighty influence to the scientific work of the society. Among the other men who in New York have made contributions to otology that were of great service not only to American Surgery but to their specialty for the surgical world, must be mentioned Dr. David Webster and Dr. Gorham Bacon.

It was in New York that the International Otological Society was founded on a call issued in connection with the International Medical Congress held in Philadelphia during the Centennial year, 1876. The meeting for it was called after the International Ophthalmological Congress which was held in New York. Organization was effected September 15th, 1876. D. B. St. John Roosa was elected president. (Report of International Otological Society New York, 1876.)

The man who was thus honored represented one of New York's potent factors in surgery and especially in his favorite specialty, otology. Daniel Bennet St. John Roosa (1839-1908), was a graduate of Yale in arts, and in medicine at the University of the City of New York in 1860. He was assistant surgeon of the Fifth Regiment of the National Guard in the field in 1861. He spent the following year in Berlin and Vienna, making special studies in ophthalmology and otology, but saw some further service in the Twelfth Regiment of the National Guard of New York in 1863. He translated Von Troeltsch's "Diseases of the Ear" in 1864, and wrote his own text book on the subject in 1869. He was Professor of Ophthalmology and Otology at the University of the City of New York from 1866 to 1882, and later in the New York Post Graduate School which he helped to found, and of which he was a president. His organization of post-graduate medical teaching in America is probably his greatest merit, though his influence in medical societies in the state was always dominant, and he did much that is memorable for professional life and uplift.

It was at the New York Eye and Ear Infirmary that in 1888

the first trephining of the skull for brain abscess consequent upon disease of the ear was performed. This was the first operation of its kind done in this country, and the pioneer of a long series of life-saving operative interventions in otherwise absolutely fatal cases.

In the "History of Otology," written by Pollitzer ("Geschichte der Ohrenheilkunde," Stuttgart, 1913), New York has a large space in the history of otology in North America. A definite tribute is paid to the State as a magnificent contributor to this scientific specialty.

ORTHOPEDICS

One of the surgical specialties in which New York has been most prolific in its endowment of world surgery with original work of great significance, is orthopedics. The crowded living quarters of the poor, with the lowered nutrition, encouraged the prevalence of bone tuberculosis among children, while the teeming families of the immigrants, so many of whom stayed in New York's tenement district after entering the country, provided abundant material for this special work. The opportunity was very well taken advantage of by a number of men, and as a consequence New York became a centre of instruction in this specialty by which the important principles of orthopedics and their beneficent practice were spread throughout the country.

The founder of the specialty in New York was William Detmold (1808-1890), an enterprising surgeon who when scarcely more than forty had dared to open the lateral sinus of the brain for abscess. The report of this operation as published in the *American Journal of the Medical Sciences* (Philadelphia, 1850) attracted wide attention, but is said to have been treated by Virchow with "scornful scepticism" (Garrison). Orthopedics as developed under such a master as he might be expected to be, was thoroughly original, and ready to treat problems not from the standpoint of old time practice or medical authority, but from what seemed most likely to benefit the patient. Detmold's work was not only of great value for American surgeons but for the surgery of the world.

Detmold was born at Hanover, in Germany, and made his medical studies at Göttingen, where as a special pupil of Stromeyer

he became interested in orthopedics, which that distinguished German surgeon was developing. When Detmold came to New York he established a public clinic for the treatment of crippled children, which was largely attended and attracted the attention not only of medical students but of physicians. He introduced Stromeyer's method of tenotomy, and succeeded in getting some excellent results in cases that had been hitherto left untreated almost as a rule. His pioneer work was eagerly followed. Enterprising progressive young New York surgeons gave themselves to the fascinating subject and the city became the American centre of orthopedic teaching.

One of the most important of our orthopedists in this country was Lewis Albert Sayre (1820-1900), to whom orthopedia in America owes so much. Dr. Sayre was born at Bottle Hill, now Madison, New Jersey, his father being a prosperous farmer. He did his high school work at Wantage Seminary, Deckertown, Sussex county, and from there went to Transylvania University, Lexington, Kentucky, where he graduated in 1839. He received his medical education at the College of Physicians and Surgeons, New York, graduating in 1842, having interested himself particularly in surgery and especially the surgery of chronic joint conditions. When Bellevue Hospital Medical College, of which he was one of the founders, was organized, Sayre was given the chair of Orthopedic Surgery, which had been created for him, the first for this specialty in this country. His work soon attracted attention not only in this country but in Europe, and in 1871 he lectured on hip disease before several medical societies in Europe by special invitation. He read a paper on hip joint disease before the International Medical Congress in Philadelphia in 1876, and performed at a demonstration clinic his radical operation for it. Lord Lister, who was present, said afterwards, "I feel that this demonstration would of itself have been sufficient reward for my journey across the Atlantic." The following year he was invited to read a paper and give a demonstration in orthopedics at the annual meeting of the British Medical Association. This attracted the attention of many of the best English surgeons, and a formal resolution of thanks to him was passed by the association. He continued to work and write on orthopedics until almost the time of his death. His two volumes, a "Practical Manual on Club Foot" and "Lectures on Orthopedic Surgery," went through many editions in



LEWIS A. SAYRE

English, and were translated into many of the modern languages, including Japanese. Sayre came to be looked up to as a founder in orthopedics who more than any one else just after the middle of the nineteenth century called practical attention to the problems involved in the surgical treatment of crippled children, and established the principles on which their treatment should be undertaken.

He received many distinctions. He was made an honorary member of the British Medical Association, of the Surgical Society of St. Petersburg, of the Medical Chirurgical Society of Edinburgh, and was created a Knight of the Order of Vasa by King Charles IV of Sweden for his success in treating one of the royal family.

Another of New York's distinguished orthopedists was Charles Fayette Taylor, who was born and brought up on a farm in Williston, Vermont. After taking his medical degree at the University of that State in 1856, he went to London, and coming in contact with a pupil of Ling, the well known Swedish movement therapist, brought back with him when he returned to settle in New York a practical knowledge of the Swedish movements and the basic ideas for therapeutic exercises and instrumental help for chronic joint troubles and other deformities. Curiously enough, his careful study of cripples led him also into the field of psychotherapy, so that he was able to effect many striking cures in neurotic patients who were bedridden, not because of physical incapacity to walk but because of psychic inability, the so-called *astasia-abasia* of the French. Rest, therapeutic exercises, mechanical therapeutics and psychotherapy, were his remedial resources. The New York Orthopedic Dispensary (now the New York Orthopedic Dispensary and Hospital) was founded for him, and he did much to develop scientific orthopedics in this country. Most of his published articles are on orthopedic subjects, and his book on the "Mechanical Treatment of Angular Curvature, or Pott's Disease of the Spine," was translated into German, as was also his "Mechanical Treatment of Disease of the Hip Joint." His first and largest work was on "The Theory and Practice of The Movement Cure," published in 1861. For his inventions in connection with apparatus for the relief of deformity and movement therapy, he was honored with medals or diplomas at the International Expositions, held at Paris, 1867, Vienna, 1873, and Philadelphia, 1876. He was made a corresponding member of the Imperial Medical Society at Vienna on

Bilroth's nomination. He was noted for his sympathy with sufferers, and he drew the attention of prominent men in New York to the need of special care for the cripples and deformed, and thus created a new field of beneficence. He never wrote prescriptions himself, finding no use for them in his practice, though he was not opposed to the use of drugs, but felt that in chronic cases other modes of treatment were ever so much more important and ever so much less liable to abuse.

Another name that deserves an enduring place in the history of orthopedics in New York is that of James Knight (1810-1887), whose intense sympathy for suffering children so attracted him to this specialty that he made a hospital of his private house for needy cases until an orthopedic institution was provided. He was interested above all in non-surgical orthopedics, securing the correction of deformities and even the healing of chronic inflammatory conditions by instrumental means, manipulation and proper expectant treatment. His own phrase for it was bloodless surgery. His book, "Orthopedia, a Practical Treatise on the Alterations of the Human Form," attracted wide attention. Most of his work was done before Listerism came to improve surgical results so strikingly, so that his mechanical methods compared much more favorably with surgical procedures than would have been the case later. Undoubtedly he did much for orthopedics by his emphasis of mechanics, and yet exaggeration in this discouraged surgical intervention more than was favorable for the progress of orthopedics. He became extremely expert in the use of apparatus and his tenderness toward children made him invaluable in attracting attention to their needs. He was ahead of his time in his effort to make health better rather than merely cure disease and his book on "The Improvement of the Health of Children and Adults by Natural Means" deservedly attracted attention.

A significant factor in the development of orthopedics in New York was Dr. Adoniram Judson, who after serving as a surgeon during the Civil War settled down to do orthopedic work in connection with the Out-Patient Department of the New York Hospital. His studies in lateral curvature of the spine were particularly valuable. He demonstrated the causes of lateral curvature, and showed by a series of ingenious models that rotation occurred whenever the spinal column was bent laterally. His studies made clear what the principles of treatment should be, and he came de-

servedly to be looked up to as a leader in non-surgical orthopedics. He was the president of the American Orthopedic Association in 1890, and a leading spirit in the Orthopedic Section of the Academy of Medicine. He secured such wide publicity in Europe for the proceedings of the section that inquiries were sometimes made from abroad as to whether these were not the transactions of the Academy itself.

Two men whose force and character as teachers had much to do with the focus of attention on orthopedics as practised in New York at the end of the nineteenth and the beginning of the twentieth century, were Dr. A. M. Phelps, who taught at the Post-Graduate, and Dr. Wisner R. Townsend, who taught at the Polyclinic. Dr. Phelps was a forceful energetic teacher who attracted many students, though he had the defects of his virtues and repelled many of the profession. His claims for a place in the history of orthopedics in New York depend mainly on the open operation for club foot which he devised. In this, all the tissues that resist the reposition of a club foot to the normal are divided. In some of the extreme cases it is a very useful procedure but has sometimes been applied in cases where it was not needed. Dr. Townsend's thoroughly conservative yet forceful teaching was of sound educational value and did much to influence the large numbers of young physicians in various parts of the country who came into New York for special work. His untimely death was a real loss to the medical profession in New York, for he had been deeply interested in professional advance and organization. Dr. Townsend was president of the American Orthopedic Association in 1898, Dr. Phelps having been the president in 1893.

GYNÆCOLOGY

The surgical specialty for the development of which above all the world is indebted to New York, is that of gynæcology. It was in New York City that the Woman's Hospital, the first of its kind in the world, was established, and it was here more than anywhere else that the determined and finally successful effort to relieve women of the many ills to which their duties as the mothers of the race subject them was made. Most of the men who accomplished this great beneficent work were not themselves New Yorkers born, but they were attracted to the city by the opportuni-

ties for clinical research here afforded; most of their busiest years of life were lived here, and they had the good fortune to see the fruition of their efforts to develop this great specialty through opportunities provided by the Woman's Hospital. Marion Sims, Thomas Addis Emmet, T. Gaillard Thomas, Fordyce Barker—these are great names in the history of gynecology and they make it very clear what New York has been able to accomplish in this one specialty.

Occasionally before the formal development of anything like the specialty of women's diseases, there had been some surgical incidents in which progressive surgeons ventured to perform operations for the immediate saving of life that were afterwards to be recognized features of modern gynecology. Perhaps one of the most striking of these is the case of successful removal of an abdominal extra-uterine foetus by Dr. Charles McKnight, who after having been a surgeon in the Continental army settled in New York after the Revolution, where he delivered lectures on anatomy and surgery. He was very successful in practice, and is said to have been one of the earliest physicians in New York to keep a carriage to enable him to visit the many patients that he had to see. His operation for the extraction of the abdominal foetus was discussed in the Medical Society of London, hence we have an account of it that would probably otherwise have been lost, for unfortunately Dr. McKnight died at the early age of forty-one, and so we have very few details of his career.

This case of successful extraction of an extra-uterine abdominal foetus has some points that make it of interest even at the present day. The woman became pregnant twenty-two months previous to the operation. All the common symptoms of pregnancy were present. At the end of nine months she was taken with labor pains, but no child presented, and after some time the pains ceased without any diminution of the patient's size. She was able to go about, but was uneasy. She enjoyed good health, and physicians suggested that she should wait. Dr. McKnight advised immediate operation before irreparable injury was done to internal parts from compression and putrefaction. The foetus was removed, but the placenta and membranes were not delivered. There was considerable sloughing of the edges of the wound after operation, but she recovered completely. In reporting the case from Dr. McKnight's notes, Dr. Mease dwelt on the "impropriety of attempting



J. MARION SIMS

to extract the placenta in such operations." Dr. Lettsom, who reported the case to the Medical Society of London from a letter received from Dr. Mease, seems to agree with this conclusion: ("Memoirs of the Medical Society of London," Vol. IV.)⁴

The most important name associated with the development of modern gynecology as a specialty is that of Marion Sims and his greatest work was done in New York. He was born in South Carolina, graduated at Jefferson in Philadelphia, but secured his opportunity for the development of his life work under circumstances that made him a teacher of the surgical world of his time in New York City. He was not a brilliant student as a young man, and as he said himself, "nobody ever expected anything of me, and I never expected anything of myself." He tried country practice at several places and failed, and then he volunteered in the Seminole War, and after it was over established his office at Montgomery, the capital of Alabama, and found himself, and recognition soon came. Like Dr. McKnight, whom we have just mentioned, his military experience seems to have aroused his native ability to do progressive work.

Dr. Sims' attention was attracted especially to vesico-vaginal fistula, and in order to examine and treat it he invented the duck bill speculum, since known by his name, using bent spoons for the purpose at first. Later he made the almost equally important invention of the silver wire suture. Of the Sims speculum as it was finally perfected by its inventor after he had used his spoons for a time, Dr. Thomas Addis Emmet, himself distinguished in gynecology and above all for his work on vesico-vaginal fistula, once said in enthusiastic vein: "From the beginning of time to the present, I believe that the human race has not been benefited to the same extent and in a like period by the introduction of any other surgical instrument. Those who did not fully appreciate the value of the speculum itself have been benefited indirectly to an extent they little realize, for the instrument in the hands of others has probably advanced the knowledge of the diseases of women to an

⁴Thacher in "American Medical Bibliography," published 1828, says: "The interest in this case has lately increased by the discovery of the preparation itself, preserved in a glass jar and found on the ground of a cellar in New York. It confirms the views of those who believe in the entire production and protection of the human *fœtus extra uterum*." (Hosack and Francis's "Medical and Philosophical Register," Volume II.)

extent which could not have been done for a hundred years or more without it."

Sims obtained his opportunity to present his discoveries to New York physicians and through them to the American profession by the combined influence of Dr. Valentine Mott and Dr. John W. Francis. With the help of Dr. Fordyce Barker, the president of the County Medical Society, they secured the calling of a special meeting at which Sims presented his new operative procedures for the relief of post partum conditions and at which was discussed the question of the foundation of a special hospital for the diseases of women. A physician who was present—his name scarcely matters, what he said was typical, not personal—objected to the erection of such a special hospital because there was no need for it and his words show what the gynæcology of the day before Sims comprised. He said: "The field is too small for a special hospital. Any one can apply nitrate of silver to an old ulceration through an old cylindrical speculum; and all that is needed to cure leucorrhea is an astringent injection. There is no difficulty in introducing a Physick globe pessary for prolapsus." It was out of this slough of despond that Sims' work in New York was destined to lift the specialty of the diseases of women to a place of distinction and beneficent achievement.

Fortunately the plan succeeded and under Dr. Sims' guidance the Woman's Hospital of New York was organized, and here the modern science of gynæcology may be said to have been born. The work done attracted the attention of the world, and Sims came to be looked up to as a great founder in surgery. This later work in his specialty had been prepared for by general surgery of special significance and interesting originality. He had dared to open an abscess of the liver in 1835, and to perform a little later a cholecystotomy and had removed the lower jaw from within the mouth without external mutilation, as well as successfully removed the upper jaw for malignant tumor of the antrum. After such experiences it is no wonder that he was ready for the development of the specialty of gynæcology.

With the opening of the Civil War, Dr. Sims, with his Southern sympathies, found it uncomfortable in New York, so in 1861 he went to Europe. His performance of the operation for vesicovaginal fistula in Paris gave him a place among the surgeons of Europe almost unparalleled. As a consequence of the spread of

the news of the impressions produced on such men as Nélaton, Baron Larrey, Velpeau and others, he was summoned in consultation on gynæcological cases to many parts of Europe. He operated on many distinguished members of the nobility, and was for a time the special guest of the Emperor of the French at St. Cloud while operating on a member of the French nobility. In short, some five years were spent in Europe as a triumph, though at the beginning it must have seemed almost a voluntary exile.

After the close of the Civil War, Dr. Sims returned to New York, but on the outbreak of the Franco-German War all his sympathies as a professional man were roused for his suffering friends among the French, and he became the surgeon-in-chief of the Anglo-American Ambulance Corps. His services were highly appreciated by the French, and even the French Republic felt called upon, after the fall of the Empire, to confer upon him the commandership of the Legion of Honor. For the next dozen years Dr. Sims practised partly in America and partly in Europe, always doing fine surgical work in his specialty.

In 1894 there was unveiled in Bryant Park, New York, a statue to Dr. Sims which chronicles something of the esteem in which he was held by his professional brethren as well as by his patients and many admirers throughout the world who realized the wonderful alleviation of human suffering that had been brought about by Dr. Sims' work. The best summary of his career is to be found in the inscription on that monument as quoted on following page.

When Sims went to France at the outbreak of the Civil War, he was succeeded in his work at the Woman's Hospital by Dr. Thomas Addis Emmet, himself as ardent a sympathizer with the South as Sims, and who actually left for the South on the last train that went through, but was advised by President Davis that the Confederacy had more doctors than it needed and that he should go back to New York, where probably he could accomplish more good for the South by helping to mould conservative opinion at the North. Constantly under suspicion and sometimes actually under surveillance because of his Southern sympathies, Dr. Emmet not only continued the work so well begun by Sims, but developed it and made the Woman's Hospital of New York the famous institution that it became.

As Dr. Edward T. Abrams said in his article, "Con-

J. WARREN HUNT, M.D., LL.D.
 BORN IN SOUTH CAROLINA, HE DIED IN NEW YORK CITY
 IN 1882
 SURGEON AND PEDIATRICIAN
 FOUNDER OF THE WOMAN'S HOSPITAL OF THE STATE OF
 NEW YORK
 HIS BRILLIANT ACHIEVEMENTS CARRIED THE NAME OF
 AMERICAN SURGERY THROUGHOUT THE
 CIVILIZED WORLD.
 IN RECOGNITION OF HIS SERVICES IN THE CAUSE OF
 SCIENCE AND HUMANITY HE RECEIVED THE HIGH-
 EST HONORS IN THE GIFT OF HIS COUNTRYMEN
 AND DECORATIONS FROM THE GOVERNMENTS
 OF FRANCE, PORTUGAL, SPAIN, BELGIUM,
 AND ITALY.

On the reverse:

PRESENTED
 TO THE CITY OF NEW YORK
 BY
 HIS PROFESSIONAL FRIENDS,
 LOVING PATIENTS,
 AND
 MANY ADMIRERS
 THROUGHOUT THE WORLD.

tributions to Gynæcology" (*The American Journal of Obstetrics and Diseases of Women and Children*, 1914):

Dr. Emmet was the only man in this country who had either the knowledge or interest in gynaecology, and he was the only one that had the capacity of carrying on the work of the Woman's Hospital. For ten years after Sims' departure, Emmet was the only attending surgeon, as he was the only exclusive specialist in this country, and it was the only special hospital in the world for the diseases of women. It was during these years that men flocked to his clinics from all parts of the world to obtain something of his knowledge of this hitherto unknown specialty.

It was Emmet who gave us the plastic operations for the cure of lacerated cervix, for rectocele, for cystocele, for rectovaginal fistula, for laceration and prolapse of the urethra. It was he who first performed those plastic operations of marvelous mechanical ingenuity and patience of restoring the whole vagina, together with the base of the bladder and the urethra after they had sloughed away and giving the patient retentive power. He invented well-nigh all the instruments used in plastic work. It was only after forty-six years of continuous service that in 1900 he resigned with years and honors full upon him.

Sims and Emmet were both Southerners, but so was T. Gaillard Thomas, the third of the men who helped to raise the standard of professional work in gynaecology in New York and was prominent in making the city a centre of interest in that specialty. He was born on Edisto Island, Charleston, South Carolina, in 1831 and was educated in Charleston College, but left in his senior year to enter the Medical College of the State of South Carolina, where he graduated at the age of twenty-one. He obtained an internship at Bellevue Hospital, beginning his service in the midst of an epidemic of typhus fever. He served also in other New York hospitals and then went to Europe, where he spent nearly two years in the study of medicine, though he gave special attention to obstetrics at the Rotunda Hospital in Dublin. He returned to New York to devote himself to obstetrics, and was made Professor in that subject in the University Medical College in 1855. He became a Professor of Obstetrics, Diseases of Women and Children at the College of Physicians and Surgeons until the special chair of Diseases of Women was created, when he was chosen to it. He published in 1868 his "Practical Treatise on Diseases of Women" (Philadelphia), a book which attracted world attention. It was translated into French, German, Italian and Spanish, and curiously enough also into Chinese (at this time the Japanese had scarcely as yet

wakened up to Western culture). Over sixty thousand copies of it were sold when such a number was a record in the sale of a medical work. In 1869 he published a "History of Nine Cases of Ovariectomy," and in 1870, after doing a successful vaginal ovariectomy, he began the development of the field of operation through the vagina described as elytotomy, which was destined to occupy so much attention in New York for the next generation. His selection as attending surgeon to the Woman's Hospital in 1852 gave him the opportunity to give up general practice and devote himself to gynecology. He came to be looked upon as one of the great leaders in the country in this specialty.

A noteworthy contributor to gynecology in New York was Dr. Edmund Randolph Peaslee (1814-1878), who made his fame in that extremely difficult subject, ovariectomy, in the days before Listerism. His teaching career illustrates very well the lack of specialism in the old days. He was a Dartmouth student with his medical degree from Yale, was Professor of Anatomy and Surgery at Bowdoin, and also at Dartmouth, later became Professor of Physiology and Pathology in New York Medical College, then occupied the chair of Diseases of Women at the Albany Medical College, and then the chair of Gynecology at Bellevue. His clinical lectures toward the end of his life on ovarian tumors and ovariectomy were given at the College of Physicians. He was high in honor in his profession, being chosen as the president of the Medical Society of the County of New York, of the New York Academy of Medicine and the American Gynecological Society. His special contribution to his specialty is the invention of what has come to be termed normal salt solution. He called it artificial serum, a name that was very appropriate as Dr. Howard Kelly has remarked. He used it in washing out the peritoneal cavity in infections following ovariectomy. As he employed boiled water, which had been allowed to cool, in making the solution, it was aseptic, and this was one of the anticipations of asepsis which show how the ideas underlying it were in the air at the time.

Another significant contributor to the literature of the diseases of women so much of which made its appearance in New York at this time was Dr. Charles Lee Carroll, who wrote the review of "Ovarian and Uterine Tumors" which appeared in the "International Encyclopedia of Surgery." He was one of the first to point out the dangers of the overenthusiasm for operative pro-

cedures in gynaecology, and to insist that feminine symptoms were often due to other than pelvic derangements, and that women had all the usual organs outside of their pelvis any of which might be the subject of disease. He came of distinguished American stock, being a descendant of the Lees of Virginia, his grandfather having been a governor of Maryland, and his mother was the granddaughter of Charles Carroll of Carrollton. He was one of the men who helped to make the reputation of the Woman's Hospital in New York, and he came to be thoroughly appreciated, filling the positions of president of the New York Obstetrical Society, president of the Medical Society of the County of New York, and vice-president of the New York Academy of Medicine.

Dr. Fordyce Barker was one of the men who in the latter half of the nineteenth century (1817-1891) brought distinction to New York surgery and particularly to gynaecology. A native of Maine, he received his medical degree at Bowdoin, though he made continuation studies in Boston, Paris and Edinburgh. He became Professor of Midwifery at Bowdoin, and held this position until he removed to New York in the fifties. He held the chair of Clinical Midwifery and Diseases of Women in Bellevue Medical College Hospital, and this gave him a position from which his teaching came to be widely felt. The estimation in which he was held can be estimated from honorary degrees received from Columbia College, Edinburgh, Glasgow, Bologna, as well as his *Alma Mater*. He was a member of the Obstetrical Societies of London and Edinburgh, and he was one of the founders and first president of the American Gynaecological Society. His book on "Puerperal Diseases" (New York, 1874) ran into many editions and was translated into French, German and Italian.

In 1862 John Byrne and Fordyce Barker called attention to pelvic hematacele and its significance, and began that series of studies which have led up to definite knowledge of extra-uterine pregnancy. Brooklyn contributed in the person of the first named of these a progressive surgeon and gynaecologist who deeply influenced the department of women's diseases in his time. His patiently elaborated work was the first in America to admit a gleam of hope into that hitherto gloomy department of uterine cancer. His use of the cautery probably was the first attempt at extirpation of malignant disease of the uterus that gave a reasonable chance of the possibility of absolute cure in certain selected cases

at least, and paved the way for the radical operations which in more recent years have undoubtedly saved a great many lives and added years of health and strength for patients who would otherwise have died soon amid the most grievous sufferings.

Dr. James White, of Buffalo, broadened the field of direct intervention in the diseases of women when he succeeded in bringing about the reduction of an inverted uterus which had been eight days everted. He maintained as the result of further experience that chronic inversion of the uterus is usually reducible, and he was the first operator in America to succeed in the effort.

One of the most significant discoveries in gynecology and one that was destined to revolutionize the practice of that specialty and to give an entirely new aspect to the social significance of women's diseases, was Noeggerath's demonstration here in New York, that most of the chronic pelvic suppurative conditions in women and a great many of the acute inflammations also, were due to the presence of the gonococcus. Palliative treatment of these conditions by douching and tampons had seemed more or less justified up to this time and succeeded in allaying the symptoms of the better class women who could afford to be in bed a good deal and visit or be visited frequently by their medical attendants for the purpose of renewing the tampons. When it came to be clear, however, that these chronic pelvic conditions were not more or less inevitable women's diseases nor consequences of the relaxation of feminine fibre in our time, but due to direct infection, the necessity for surgical intervention became very clear. Noeggerath's discovery then made a new starting point for the specialty of gynecology. For long, older physicians at least, were much opposed to the idea and refused to accept the notion that most of the ailments of women were of gonorrheal origin but with increase of knowledge Noeggerath's discovery was amply confirmed.

A distinguished up-State surgeon who did much to develop the specialty of gynecology and to apply its benefits widely, was Dr. Eli Van de Warker (1841-1910) who was born in West Troy, New York. His teacher in early years was the father of President Chester A. Arthur. Van de Warker, after preliminary training at Troy Polytechnic Institute, graduated at the Albany Medical College. This was during the Civil War, and he served as an army surgeon until the close of the war, when he began practice in Troy. He moved to Syracuse in 1870 and gradually de-

veloped an interest in gynæcology. Dr. Howard A. Kelly did not hesitate to say that "Van de Warker should be reckoned among the pioneers of gynæcology." He was one of the founders and active members of the American Gynæcological Society, and he was also for a considerable time a prolific writer and zealous in promoting the advance of his specialty from that stage which it occupied in the seventies and eighties to its present status. His studies convinced him that woman was unfitted for the higher education, and while he was Commissioner of Schools at Syracuse, New York, he wrote a book on this subject, which attracted attention everywhere and met with much more favor than it would in our time.

Besides operative gynæcology, a number of important remedial measures that in their time at least attracted the attention of gynæcologists throughout the country were invented in New York. In 1867 Newman reported some excellent results with electricity in women's diseases which seemed of special service in extra-uterine pregnancy. When cauterization was a favorite mode of treating the cervix, Dr. Lente, of New York, devised the silver probe with platinum cusp in order to apply fusible substances to the uterine cavity. Dr. John Ball, of Brooklyn, demonstrated the successful treatment of constriction and other irregularities of the cervical canal by rapid dilatation with expanding instruments of steel.

One of the distinguished members of the medical profession in New York whom we owe to the revolution of Germany in 1848 was Dr. Paul Mundé (1846-1902), whose contributions to obstetrics and gynæcology make him worthy of a place in our history. He was brought to this country by his father at the age of three, studied medicine at Yale, entered the service in the Union army in 1864 as a medical cadet, and graduated at Harvard in 1866. He was assistant surgeon in 1866 in the Bavarian army in the war between Prussia and Austria, spent the next three years at the Maternity Hospital in Wurzburg as assistant professor to Scanzoni, who turned his attention to gynæcology. In 1870 Mundé served in the Bavarian ranks against the French, and received the Iron Cross for bravery. He spent the next two years in London, Edinburgh and Paris, and then in 1873 returned to America. In 1874 he became the editor of the *American Journal of Obstetrics and Gynæcology*, and must be considered one of the men who did most for the professional development of gynæcology in this country. He was, successively, treasurer, president and vice-president of the

American Gynæcological Society, after being president of the New York Obstetrical Society, and honored by membership in foreign gynæcological associations. He was a fluent writer and speaker, and we have more than one hundred articles from his pen. His book on "Minor Surgical Gynæcology" was one of the pioneer books in its department, and went into several editions.

One of New York's well known gynæcologists of the end of the nineteenth century was Dr. Horace Tracey Hanks, born at East Randolph, Vermont, in 1837. Like so many other successful physicians, he taught school in order to obtain his professional education, and graduated in 1861 from the Albany Medical College. He enlisted as an assistant surgeon in the New York Volunteers during the Civil War, afterward returning to practise in Royalston, Massachusetts. He came to New York in 1868; became assistant surgeon to the Woman's Hospital in 1875, and attending surgeon in 1889. After this he came to be looked upon as one of the prominent American gynæcologists. In 1885 he was elected Professor of Diseases of Women at the New York Post-Graduate Medical School, and held this position until 1898, when failing health portended the end, which came in 1900. Papers on "Ectopic Pregnancy" and other subjects relating to his specialty attracted wide attention.

One of the New York teachers of gynæcology, whose name was widely known throughout the country as well as in Europe, was Dr. Alexander J. C. Skene, of Brooklyn, who after having been Professor of Gynæcology became the Dean and Professor of Gynæcology at the Long Island Medical College. He served during the Civil War, and to him is due the organization of an ambulance corps as it is arranged at the present time. He wrote a great many gynæcological papers, but was also a writer on topics for popular periodicals on various subjects. He was an amateur sculptor, and a man whose broad influence for the uplift of the medical profession was thoroughly felt.

GENITO-URINARY SURGERY

The specialty of genito-urinary surgery did not acquire a separate foothold in New York medicine until after the middle of the nineteenth century. It was not, however, for lack of patients who needed a specialist's care, for there are abundant evidences of the occurrence of genito-urinary and venereal affections. The two

first special charges mentioned in the rates for professional services established by the old Medical Society of the State of New York shortly before the beginning of the nineteenth century, were "for curing a simple or virulent gonorrhea, from \$10 to \$20; for curing confirmed syphilis, from \$25 to \$100." These were good fees, considering the value of money at least three times that of our time. There are special charges also for the introduction of a catheter the first time, and a smaller amount for each subsequent time, and a fee named for extracting a calculus from the urethra, as well as for operations for phimosis, paraphimosis, and perforating the urethra.

That New York surgeons were ready for the development of genito-urinary surgery can be appreciated from Dr. Valentine Mott's experience in lithotomy. This was the one phase of genito-urinary surgery cultivated in the first half of the nineteenth century, and Dr. J. W. S. Gouley in his "Surgery of Genito-Urinary Organs" (New York, 1907), calls attention to the fact that Valentine Mott lost but one case in his first fifty lithotomies. This was probably the best record of its kind made in the world up to that time, for Sir Henry Thompson tabulated nearly two thousand cases with a mortality of one in eight, and Gross a similar number with a mortality of not much less than one in eleven.

Occasionally, before the development of the specialty, enterprising American surgeons made contributions to the subject that attracted attention not only throughout this country but abroad. Dr. Stephen Smith, while resident physician at Bellevue Hospital, published in the *New York Journal of Medicine* (May, 1851) a paper on rupture of the urinary bladder, the first paper on that subject ever published in English, though Harrison, of Dublin, had reported two or three cases of the occurrence of the condition before this. Dr. Smith's paper was translated into both French and German, and in France, where the genito-urinary specialty was already flourishing, it was appreciated so much that it led to his election as a member of the Surgical Society of Paris.

The first of our American genito-urinary specialists was Dr. Freeman J. Bumstead (1826-1879), who, after graduating from Harvard Medical School in 1851, spent some time in Paris studying venereal diseases. On his return to New York he became attached to the New York Eye and Ear Infirmary, and devoted himself to this department, but in 1860 he turned to take up definitely genito-

urinary surgery and venereal diseases. His studies in Paris made him familiar with the best work of the Parisian genito-urinary specialists, and he translated the Hunter-Ricord "Treatise on Venereal Diseases" and Cullerier's "Atlas of Venereal Diseases," which did so much to give the specialty of venereal and genito-urinary diseases a proper place of professional dignity among American physicians. Later he wrote a monograph on "Pathology and Treatment of Venereal Disease," and was the co-author with Dr. Robert W. Taylor of a text book of venereal diseases.

The names of Bumstead and Taylor cannot be separated in any historical treatment of the specialty of venereal diseases in New York. Dr. Robert William Taylor (1842-1908) was born at Coventry, in England, but came to America when a boy. His father died when very young and he left school at fourteen and at twenty-one was in full charge of one of the largest retail drug stores in New York City. Graduated from the College of Physicians and Surgeons in 1858, and close association with Dr. Bumstead, brought him to take as his specialty venereal and genito-urinary diseases and dermatology. He was not thirty when his paper on "Dactylitis Syphilitica" attracted wide attention. Some ten years later (1879) he published, in collaboration with Dr. Bumstead, the well known text book "The Pathology and Treatment of Venereal Diseases." This came to be the recognized authority in this country on the subject, and ran through many editions. In 1887 he edited another very well known work "A Clinical Atlas of Venereal and Skin Diseases," which did much to furnish valuable data for diagnostic purposes to those who could not expect to have the opportunities for observation provided by a large city clinic. In 1891 Dr. Taylor became Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons in New York, after having been Professor of Dermatology in the Woman's Medical College and in the Medical Department of the University of Vermont. At the time of his death in 1908, Dr. Taylor was known everywhere throughout the medical world by those interested in his specialty, and recognized as a careful observer who had done much to simplify, not only for specialists but for the general practitioner of medicine, the details of a difficult department of disease.

Another of our distinguished New York specialists in this department, though he reached distinction also in general surgery,

was William Holme Van Buren, who, with Dr. Edward L. Keyes, Jr., wrote the exhaustive treatise on "The Diseases of the Genito-Urinary Organs" which came to be looked upon as the authority on this subject in this country. Van Buren, too, had studied in Paris under Velpeau, and after his return, marrying the daughter of Valentine Mott, he became prosector to his father-in-law and later Professor of Anatomy in the University of New York. Subsequently he was Professor of the Principles of Surgery in Bellevue Hospital Medical College, but was particularly known for his clinical lectures on the surgical affections of the genito-urinary organs.

A New York surgeon whose name came to be very widely known throughout this country for his inventions of instruments for and contributions to genito-urinary diseases, was Fessenden Nott Otis, who was born near Saratoga, in 1828. He received his education at New York University and obtained his degree in medicine in 1852. After an internship in Charity Hospital, New York, he became a surgeon to the Pacific Mail Steamship Company, living in Panama for some five years. In 1860 he settled in New York and became lecturer and then Professor of Venereal and Genito-Urinary Diseases in the College of Physicians and Surgeons. He came to be widely known in his specialty. He was the inventor, as I have said, of a number of new instruments and modifications of older instruments for genito-urinary work. The urethrometer and the dilating urethratome which are known by his name came to be very extensively used. His writings on syphilis attracted possibly even more attention than those on the purely surgical aspects of his specialty. His volume, "Practical Lessons on Syphilis and Genito-Urinary Diseases," came to be a familiar text book in the hands of physicians throughout the country.

The radical surgery of the prostate was taken up very seriously in New York, and the line of development which this branch of genito-urinary surgery was to follow was initiated by Dr. Samuel Alexander, whose untimely death deprived New York of a notable worker in the specialty. With the introduction of the cystoscope, with all that that meant for the development of surgical treatment of the bladder on definite information, Dr. Tilden Brown was one of the pioneers for the country in the use and improvement of the instrument. Dr. William K. Otis, the son of Fessenden Otis, did a great deal for the development and use of the urethroscopy. For fifty years of the history of genito-urinary specialty in America,

New York was looked to as providing the leading spirits and was the Mecca for patients suffering from chronic genito-urinary affections not only from all of the States but also from the South American countries.



CHAPTER XIII

THE MEDICAL SPECIALTIES

NEW YORK's place in the surgical specialties as a pioneer and groundbreaker for American surgery is well recognized. The State has been, however, quite as noteworthy a leader in what may be called the medical specialties, that is, those phases of special treatment of particular parts of the body not involving surgical procedures or but to a slight extent. Indeed, New York State's contribution to the knowledge of the causation and treatment of tuberculous disease of the lungs has been so important and far reaching as to demand a special chapter. In dermatology and neurology, in the care of the insane and the mentally defective, as well as in medical jurisprudence, New York physicians have been pioneers for this country at least in many important respects. New York's special institutions for the care of the insane and defectives have constituted the best opportunities for the study not only of the medical features of disease, but also the administrative details of the management of such hospitals, colonies and homes.

DERMATOLOGY

In dermatology New York holds a particularly high place in the development of the specialty, because members of the New York medical profession were pioneers in the making of history in many regards not alone for this country but for the world. It was in New York City in 1869 that the first association of physicians, with interests exclusively dermatological, was established. Seven years later, in connection with the Centennial Medical Congress in 1876, the call or the organization of the American Dermatological Association was made from New York. This was the first national association in dermatology founded anywhere in the world, and held its first formal meeting at Niagara Falls in September, 1877.

For a generation before this New York had been a leader in interest in dermatology. The first dispensary in America for the treatment of skin and venereal diseases was the Broome Street Infirmary for Diseases of the Skin, established in New York City in 1836 by Drs. Henry D. Bulkley and John Watson. At this infirmary, the year of its foundation, Dr. Bulkley, who had made special studies in skin and venereal diseases at the St. Louis Hospital, Paris, gave a course of seven lectures illustrated by clinical cases, the first lectures of the kind in the country. Five years later he delivered a course of lectures to the medical students of the College of Physicians and Surgeons in New York in the springtime. The first professorship in the subject was established in New York City at New York University in 1867.

After this the development of dermatology as a specialty was rapid and thorough. During the decade between 1860 and 1870 most of the dispensaries of New York City established dermatological clinics and practitioners of medicine began to recognize the necessity for having special information with regard to skin diseases. The first systematic treatise on dermatology by an American author was "An Elementary Treatise on Diseases of The Skin," by Dr. Henry G. Piliard, of New York, which was published in 1874. This anticipated by a year the text book of "Practical Treatise on Diseases of the Skin" by Dr. DeLoring, of Philadelphia. The first journal devoted to skin diseases exclusively, was the *American Journal of Syphilography and Dermatology*, edited by Dr. Morris H. Henry, of New York. The first number of this periodical appeared in January, 1871, and it was discontinued in 1874, only to be succeeded that same year by the quarterly journal *Archives of Dermatology*, with Dr. L. D. Bulkley as the editor. The *Archives* continued its publication for some eight years until it was succeeded in 1882 by the *Journal of Cutaneous and Venereal Diseases*, the original editors of which were Henry G. Piliard and Prince A. Morrow. This continued until the present time, though for the past five years since it has become the official organ of the American Dermatological Association its name has been changed to the *Journal of Cutaneous Diseases*.

The first hospital for diseases of the skin in America was the New York Skin and Cancer Hospital, opened for patients January 1, 1883. As some three thousand patients were treated during the

first three years, the need of such an institution became very clear.

A distinguished authority in dermatology and syphilology, whose many contributions to these subjects made his name widely known throughout the country was Dr. Prince Morrow. In his later years his influence was strongly exerted for the prevention of venereal disease, and he was the organizer of the Society for Social and Moral Prophylaxis, which brought the subject of venereal disease prophylaxis, by conservative diffusion of information, properly before the country.

PEDIATRICS

Probably the medical specialty for which this country and indeed the medical world owes most to New York physicians is that of children's diseases. The first professorship in the specialty was founded in New York City, and the recognition of the fact that the diseases of children were so different in many ways from those of adults as to deserve special study, came particularly in connection with the excellent work done on the subject in the metropolis. It is true but sad to confess that the very large numbers of ailing children in the crowded slums of New York, and the very unsuitable conditions under which children had to be brought up at all seasons of the year but especially in the summer time, afforded opportunity for the study of children's diseases to a greater extent than probably anywhere else. It is to the credit of New York physicians that, to a noteworthy extent, they took advantage of the opportunities thus afforded, and gradually brought about conditions that have greatly improved the health of children in the city, and have made it in certain ways at least, in spite of its size and the many disadvantages connected with its crowded living conditions, a model for other large cities of the world in its low infant mortality.

The significant development of the study of children's diseases as a specialty in New York came just after the middle of the nineteenth century. It had been evident for some time, however, that the old-fashioned treatment of the diseases of children was proving unsatisfactory, and it had come to be recognized that children could not be treated on the same general principles as adults, and above all could not be subjected, without serious detriment to their health, to the rather heroic therapeutics in vogue in the early part

of the nineteenth century. The serious and often fatal abuses in these matters were first emphatically pointed out in New York, and it was not until these were eradicated that a real scientific basis for the development of genuine knowledge of children's diseases could come.

Dr. J. Brodhead Beck collected a series of essays on the effects of opium, mercury, emetics, blisters and blood letting on the young subject, which appeared under the title of "Essays on Infant Therapeutics" (New York, 1849). This pointed out what great caution should be taken in the employment of these drugs, and remedial measures on the very young. Practically the two most used drugs in all branches of medicine, but the very standbys for the treatment of the diseases of children, were opium and calomel. Beck pointed out that both of them were dangerous, and that opium, even in the shape of the very mild preparation of the syrup of poppies, had caused a great many deaths. He emphasized the fact that practically all the proprietary remedies or old-fashioned preparations that were used were dangerous, and that "Dalby's Carminative" and "Godfrey's Cordial," both popular household remedies of the time, had undoubtedly been the cause of many an infant's death attributed to other agents, though also of not a few deaths that were recognized as cases of poisoning.

Probably nothing shows so well how much need there was of a development of pedology so as to separate the treatment of children from adults as Dr. Beck's book, for it is full of warnings against certain medical practices prevalent in his day. Some of the abuses of children by therapy were awful. Blisters were very commonly used, and as children do not stand blisters well, very serious results sometimes followed. Dr. Beck quotes Dr. Ryan, who says, "I have seen a blister on the chest followed by sloughing, and an aperture form over the epigastrium which exposed the subjacent viscera." Dr. Thompson had seen "gangrene and death follow the application of a blister on an infant." It may be recalled that blisters were the universal practice for all cases of sore throat, including diphtheria and scarlet fever, but also such milder affections as simple tonsillitis and pharyngitis as well as measles. No wonder that Dr. North said, "I have frequently seen very severe paroxysms brought on in consequence of the unnecessary and injudicious application of blisters." Dr. Beck's conclusion is that "the prevalent opinion that if blisters do no good

they can do no harm, is unquestionably a great error and has been productive of vast mischief. Independently of the unnecessary suffering which they may occasion, they sometimes produce death by ulceration and gangrene, while in others they insidiously aggravate the disease they were intended to relieve."

With regard to mercury for children, Dr. Beck is quite as ready to warn as with regard to bleeding and blisters. He says that mercury should be administered with great caution where a child has been sick for a considerable length of time, and when the strength has been much reduced. A single cathartic dose of calomel may prove fatal. He declares "the too common practice of giving calomel as an ordinary purge on all occasions is certainly unjustifiable." He is quite sure that in adults it often does a great deal of harm. Its frequent use predisposes to infectious diseases by weakening the system, and he thought that it developed "the latent tendency to other diseases such as scrofula and phthisis pulmonalis, and if it does this in adults how much more likely in the young infant."

It is often thought that inunctions of mercury are a comparatively recent mode of administration, and from the familiar term *Schmier Kur* they are often thought German in origin. Dr. Beck quotes with approval Sir Benjamin Brody who, in treating hereditary syphilis, always used inunctions. Mercury given by the mouth generally gripes and purges, seldom doing any good, but applied on bandages, the motions of the child producing the necessary friction, it does not cause soreness of the gums and it cures the disease.

When it is recalled that, as we saw in the chapter on "Epidemics," the treatment for diphtheria was calomel and antimonial purges, with blisters and bleeding, and that diphtheria was probably for a great many physicians any affection of the throat having more than ordinary symptoms, it will be understood how much need there was of reform before modern pediatrics could find a proper basis. Dr. Beck, in his little book on "Infant Therapeutics," took strong objections to the bleeding practices yet prevalent, and when it is recalled that this little book was published only the year before the middle of the nineteenth century it will be understood how much need there was of reform. Dr. Beck had to make out a strong case in order to advise physicians not to bleed children to syncope, because it was dangerous. He also

advised against the use of leeches on children unless with very great care. No wonder that he could report a number of cases of deaths after leeching. He insisted that the child stood loss of blood much worse than the adult, and that blood letting should be practised with the greatest care. He condemned Dr. Rush as having exerted a most deleterious influence in this way. He quotes Dr. Rush as declaring that he had snatched from the grave children three or four months old by bleeding them three to five times in the ordinary course of an acute disease. Dr. Beck wonders that they survived, and is quite sure that such a practice would in a great many cases end in disastrous results. Dr. Beck was not tilting at dead antagonists, but at the living physicians who still quoted Rush and followed his practice.

The time was ripe for the development of scientific pediatrics and it came. The first systematic instruction in pedology in this country was furnished by the New York Medical College. In the reorganization of this college in 1860, a full professorship in this department was established with Dr. Abraham Jacobi in the chair, carrying the title of Professor of Infant Pathology and Therapeutics. In 1861 the newly founded Bellevue Hospital Medical College organized a clinical professorship for the diseases of children, in which Dr. J. Lewis Smith, the brother of Dr. Stephen Smith, was placed. Another clinical professorship in pediatrics was established in 1865 by the University Medical College, and in 1870 by the College of Physicians and Surgeons. In succession these were occupied by Dr. Jacobi, the Civil War having proved too much for the New York Medical College. Since that time, to quote Dr. Jacobi in his introduction to the *American Journal of Diseases of Children*, January, 1911, "The example given by New York has been followed by a large number of the medical schools of the country. Though the recognition of the specialty came late," he adds, "and is far from being universal, we are still ahead of the present status of pedology in the curricula of most European medical schools."

As can be readily understood from this introductory paragraph, the first great pioneer in the specialty in this country was Dr. Abraham Jacobi, who is still with us, active in practice and ready to remind us of the many things that were accomplished in New York in the latter half of the nineteenth century. After him, undoubtedly the palm for excellence in the work accomplished and

in his power to communicate his knowledge to others must be accorded to Dr. J. Lewis Smith, whose text book on "The Diseases of Children" was the satisfying recourse of so many of the American medical profession in the large cities of this country during the trying years when our infant mortality death rate was so high as to be very disturbing.

In 1859 Jacobi, with Noeggerath, wrote a book, "Contributions to Midwifery and Diseases of Women and Children," in which the children bulked very largely in a 400-page volume. In 1862 Dr. Jacobi published a dozen of letters on "Dentition and Its Derangements," collected into a volume. In 1869 came J. Lewis Smith's text book of the "Diseases of Children," which went through eight editions in the next thirty years.

New York was always deeply interested in the literature of pediatrics, and the first volumes of the *American Journal of Obstetrics and Diseases of Women and Children*, founded in 1869 in New York, were almost entirely filled with subjects connected with the anatomy, physiology and therapeutics of the young. The first journal entirely devoted to the diseases of children was *The Archives of Pediatrics*, founded by Watson in 1884, and a second *Journal of Pediatrics* was founded by Dillon Brown in 1896.

Undoubtedly the most important development of pediatrics made in New York was Dr. Joseph O'Dwyer's invention of intubation. The sad deaths from suffocation consequent on laryngeal diphtheria, of which Dr. O'Dwyer saw so many at the New York Foundling Asylum, pushed him on to the years of patient study, experiment and application of inventive ingenuity which finally resulted in one of the most practical processes for the relief of severe and painful symptoms that are progressive almost to inevitable fatality, that has ever been made. If New York had contributed nothing else to pediatrics than intubation, the debt of American medicine and the medical world to the state would indeed be very large.

MEDICAL JURISPRUDENCE

The first of the medical specialties to receive pioneer impulse of great significance for the country from New York was Medical Jurisprudence. According to Dr. Francis, the man "to whom belongs the signal honor of being the first teacher of legal or forensic medicine in this country" was James S. Stringham, "a successful

professor of the then new French chemistry," and a learned man of wide reading and profound reflection. He was born in New York in 1774, took his A.B. degree in Columbia College in 1793, and began the study of theology, but had to give up study for a time because of delicate health, and then turned to medicine. He received his medical degree at Edinburgh in 1799, and returned to New York to be Professor of Chemistry at Columbia, and of Medical Jurisprudence at the College of Physicians and Surgeons. He always remained in delicate health, but deeply influenced his generation.

Stringham's work was taken up and carried on very successfully, indeed, so as to give America a distinct place in this department in world medicine. This was due to the combined efforts of two of the brothers Beck, Theodoric Romeyn and John Brodhead Beck, who occupy an important place in New York medicine in the first half of the nineteenth century, and whose third brother, Louis C. Beck, after receiving his degree in medicine, devoted himself to general science and finds a place among the physician scientists of New York.

The eldest of the brothers, Theodoric Romeyn Beck (1791-1855), is the author of a text book of medical jurisprudence which came to be recognized authority throughout the world. Traill, the Scottish authority on medico-legal questions, called Beck's book "the best work on the general subject which has appeared in the English language." Professor Witthaus, in our time, declared that it was "*facile princeps* among English works on legal medicine, and as admirable for scholarly elegance of diction as for profound scientific research." The book is still a classic, is rather eagerly sought for, and can still be studied with advantage. He was only twenty-one when, in 1815, he was appointed Professor of the Institutes of Medicine and Lecturer on Medical Jurisprudence in the College of Physicians and Surgeons in the Western District of New York at Fairfield. Subsequently he became Professor of Materia Medica and Medical Jurisprudence in the Albany Medical College, and was appointed one of the managers of the New York State Lunatic Asylum at Utica, becoming, in 1854, its president. He was the editor of the *American Journal of Insanity* for several years, and wrote a number of papers for other medical journals, mainly relating to insanity.

The third of the Beck Brothers, John Brodhead (1794-1851)

studied for a time with Dr. David Hosack, and received his medical degree at the College of Physicians and Surgeons in New York, 1817. His graduation thesis on infanticide proved an index of his later interests and has been declared, even in recent years, "still the standard work on infanticide in the English language." It was incorporated into his elder brother's text book on "Medical Jurisprudence." His "History of American Medicine before the Revolution" has given him a place among our medical historians, and he was the author of a series of other writings on medicine. His "Infantile Therapeutics" was a widely read book in that generation. He was one of the founders of the *New York Medical and Physical Journal*, and contributed much to its medical columns. Like his elder brother, Theodoric, he was deeply interested in professional coöperation, and he was one of the founders of the New York Academy of Medicine and a president of the New York Medical Society. In 1826 he was chosen as the Professor of Materia Medica and Botany in the College of Physicians and Surgeons in New York, and later the chair of Medical Jurisprudence was added to his work and he held both positions for many years. He deeply influenced the medical men of his generation in the direction of thoroughgoing scientific medicine.

NEUROLOGY

In neurology New York has been, as is the case in the other medical specialties, a pioneer whose work has meant much for the rest of the country. At all times there were pathfinders in the difficult field of neurology doing successful work in New York City, and attracting the attention of students from many of the States.

One of the most important contributions to neurology in America was made by Dr. Huntington, a country practitioner of medicine of Long Island who, as the result of a collation of family records of disease, described what has since come to be known under his name as Huntington's Chorea. His father and grandfather, both physicians, had treated the disease in the family which he described for a number of generations, and the hereditary nature of the affection called particular attention to it. He brought to attention the pathognomonic signs of the disease, the irregular movements, the development of psychical troubles with advancing

years, and its late onset. Further studies have shown that the disease has continued to recur in certain Long Island families in the eastern end of Long Island for fully two centuries. The affection has been described in many other parts of the country, however, and has been seen in other countries, and everywhere the acute observation of Huntington is recognized as worthy to have the affection called by his name.

The serious study of nervous diseases in this country in connection with the growing scientific interest in them in Europe after the middle of the nineteenth century, soon lifted this phase of knowledge into a specialty that attracted wide attention. The New York Neurological Society, the first of its kind in this country and the only local neurological association for some ten years, was founded in 1872. This society was reorganized in 1874 with about fifty members and the following officers: President, W. A. Hammond; vice-presidents, J. C. Peters and J. Marion Sims; Recording Secretary, George W. Wells; Corresponding Secretary, Max Hertzog; Treasurer, Alexander Murray. That same year the New York Society of Neurology and Electrology was formally incorporated, January, 1874, and elected the following officers: President, Meredith Clymer; Vice-president, Austin Flint, Jr.; Treasurer, Alfred Carroll; Corresponding Secretary, John J. Mason; Executive Council, Austin Flint, Jr., John C. Dalton, D. B. St. John Roosa, E. G. Loring, Jr., George M. Beard. They congratulated themselves on the fact that there were now two active societies in New York City devoted to the advance of neurological science. Dr. Hammond revived his psychological journal under the title of the *Psychological and Medico-Legal Journal* in connection with the Neurological Society; and the *Archives of Electrology and Neurology*, edited by George M. Beard, issued its initial number the same year (1874) as the representative of the other organization.

In the midst of this intense interest in neurology in New York, it was not surprising that in June, 1875, the American Neurological Association was founded here. The local societies continued to be active, as can readily be seen from the published papers in various journals which were read before them. The Society of Neurology and Electrology seems to have been much more active, because at that time there was a very definite feeling that electricity was to prove a marvelously helpful agent in the therapeu-

ties of nervous diseases. It took a long while for that idea to die out or dwindle in interest, and in the meantime what seemed to be the more practical society naturally was the focus of most attention.

Neurology in New York had the advantage for a time of rather intimate contact with Dr. Brown Sequard (1817-1894) that erratic but distinguished genius to whom neurology in the nineteenth century owed so much. On two different occasions he was for some years in New York. The first time, in 1852, when political troubles in France drove him to this country for safety, he had a rather hard struggle with poverty in New York City, teaching French and doing what medical practice he could, attending even obstetric cases, it is said, for a paltry fee. He had been born on the Island of Mauritius, his father being an Irish sea captain, his mother, a Sequard from a French family, settled for many years on the Isle of France. He was a posthumous child, and his mother, facing the problem of helping her son to a career, went to Paris and kept a boarding house in order to enable him to pursue his medical studies. When she died he added her name to his own as a tribute of affection for her goodness. He did not stay long in New York when he came in the early fifties, but went to Mauritius after a time, and then came back to this country through an invitation to be Professor of Medicine at the Virginia Medical College in Richmond. The wander spirit was on him, however, and he returned to Paris, and then later taught in London, and in 1872 was again settled down in New York where he was very successful in practice, but was still unsatisfied. Three years later he left for London again, and then became Professor of Physiology in Geneva, but succeeded Claude Bernard as Professor of Experimental Medicine in the College of France in 1878. Here, at last, he had the chance that he craved to do original work, so he stayed till his death some sixteen years later. His stay in New York made his name and work always of interest and influence in American neurological circles, and his contributions to New York medical journals kept Americans in touch with his work. In 1856 he published a series of articles on "The Functions of the Suprarenal Capsules," and in 1857 his book entitled "Researches in Epilepsy, its Artificial Production in Animals, its Etiology, its Nature and its Treatment in Man," was published here. Unfortunately, his conclusions were often influenced by his

enthusiasm and by the desire to make definite advances in this difficult department of medicine. Some of his experimental results on the transmission of acquired epilepsy in animals by heredity to the next generation have not been confirmed. Later in life his enthusiastic ardor for definite new knowledge on the internal secretions led to the therapeutic fiasco of the subcutaneous injection of organic extracts, and especially of testicular fluid. Brown Sequard's work was always stimulating, however, even sometimes when it went beyond conclusions actually controlled by subsequent experiments.

The name of another Frenchman must be counted among the most prominent contributors to neurology in New York. This was the younger Seguin, the link between the great French neurologists of the second half of the nineteenth century and America, the son of Edouard Seguin, so well known for his work in training the feeble-minded. He studied at the College of Physicians of New York, serving meanwhile two terms as a medical cadet during the Civil War and graduating in 1864. He spent some years after the war in Paris under the teaching of Brown Sequard, Cornil, and Charcot, and on his return to this country founded a clinic for nervous diseases in connection with the College of Physicians and Surgeons (1871). During the next fifteen years a series of papers on nearly every phase of nervous diseases appeared from his pen in the American medical journals. His studies of aphasia, of infantile paralysis, and particularly his lectures and publications on the localization of brain lesions, were extremely important factors in stimulating the study and practice of neurology in this country. His studies in syphilitic diseases of the nervous system were groundbreaking not only for this country but for the medical world. He analyzed the significance of and published papers on Spastic Paraplegia, which anticipated the publications of Erb and Charcot on this subject. To Seguin we owe what is known as the American method of treating syphilitic disease of the nervous system by very large doses of potassium iodide. He found American medical journals, as a rule, so little suited for the publication of scientific articles, that he gave his time and efforts to the establishment of professional journals that would be really scientific, and though he failed on several occasions because the profession was not as yet ready for such an advance, he did much to call attention to our need in this matter and arouse the rising genera-

tion of physicians to the necessity for improvement. In 1873 he joined with Brown Sequard in the editorship of the *Archives of Scientific and Practical Medicine and Surgery*; the journal scarcely survived the year. Between 1876 and 1878 he edited a series of "American Clinical Lectures," and in 1879 founded the *Archives of Medicine*, which lapsed with his collapse of interest in medicine as the result of a shock.

One of the men whose work in New York helped to bring some order into the chaos of knowledge of functional nervous diseases was Dr. George Miller Beard (1839-1883), to whom we owe the word neurasthenia. He was a graduate of Yale, to which he had come from Andover, and in 1866 received his medical degree at the College of Physicians and Surgeons, New York. He became associated with Dr. A. D. Rockwell in the study of electricity and its application to medicine and surgery. Their articles attracted wide attention and initiated the modern phase of electrical therapeutics which proved so disappointing. After this Beard wrote a series of papers upon various branches of psychology, including such subjects as trance, muscle reading, hypnotism and the popular delusions of animal magnetism, clairvoyance, spiritualism and mind reading. Among other subjects that he studied was the question of evidence with regard to which he formulated the rather interesting law that no amount of testimony, such is human infallibility, can establish any scientific fact. For him the beginning of wisdom was the rejection of average human evidence. He made special studies in functional nervous diseases and wrote on American nervousness and later on neurasthenia. His ideas on these subjects dominated the medical field here in America for a considerable period. His studies in seasickness brought out the fact that this was due to disturbance of circulation within the skull, and he pointed out how it might be prevented. He was the founder and editor of the *Archives of Electrology and Neurology*, but his early death, at the age of forty-four, put an untimely end to a very active career that was full of promise.

One of New York's most important pioneer neurologists was William Alexander Hammond, who spent fifteen years of his active life as a physician in the city, from 1864 to 1878, having been a graduate of the University of the City of New York some fifteen years before that. He had had a most varied experience as an army surgeon and then as Surgeon-General of the army from 1862

to 1864. Himself a tireless worker, he was full of initiative and set on foot many important works. He inaugurated the "Medical and Surgical History of the War of the Rebellion," founded the Army Medical Museum, brought the pavilion system of hospital construction into vogue extensively throughout the army, and organized the care of the sick and the wounded on an excellent footing. Some of his recommendations were later to bear fine fruit. They included the institution of a military medical laboratory at Washington, the location of a permanent general hospital there, the formation of a permanent hospital corps, and the establishment of an army medical school. He had received his appointment as Surgeon-General over the heads of many others, and jealousies in the service hampered his work, while his independence of spirit irritated the War Department. Secretary of War Stanton could not brook a man of this caliber under him, so on various charges Dr. Hammond was brought before a court martial and dismissed from the service. This sentence was later reversed, and Dr. Hammond restored to his full rank upon the retired list by Act of Congress. It was after his dismissal from the army that he came to New York and made an eminent success as an alienist. He wrote much and easily, and his "Diseases of the Nervous System" and "Insanity in Its Medical Relations" came to be very well known. His last set of medical interests was concerned with the animal extracts, to which he attracted great attention. Unfortunately the rôle of the influence of the mind on the body was not reckoned with in the early experiments with these, and so remedies which seemed to be producing favorable physical effects proved afterwards to be quite trivial in significance, and the whole experience was merely a demonstration in psychotherapy. As a writer and medical editor, Hammond deeply influenced his generation.

Among the men to whom neurology is particularly indebted in New York are Landon Carter Gray, Meredith Clymer and Edward Spitzka. Dr. Gray was a fine teacher whose charm of manner attracted many young men to his specialty, and whose teaching power made him a favorite. Meredith Clymer was one of the early group of men who created interest in the specialty of neurology in New York, and whose sense of solidarity for special knowledge fostered that organization of interest which helped to give New York her precedence. Dr. Spitzka was a man of deep scientific ability whose

morphological studies did much to help establish a scientific basis in work of neurology and psychiatry. Burt Wilder, of Cornell, is another man whose name deserves to be mentioned, because his work in comparative anatomy and morphology of the brain served to awaken scientific incentive in a good many directions, and made neurology much more of a concrete science than it would otherwise have been.

THE CARE OF THE INSANE

Whatever records there were of the care of the insane in the early days when New York was the Dutch Colony of New Netherlands, are said to have been disposed of in an auction, held in Holland in 1831, of documents belonging to the Dutch West India Company, and telling the story of internal administration of the Colony. This is probably also the reason why a good many details of the history of medicine are lacking with regard to the earliest times. Immediately with the coming of the English, however, we find some definite legal regulation of the care of the insane. As is noted by Dr. Robert M. Elliott, in his article on "The Care of the Insane in New York" (Note the Institutional Care of the Insane in the United States and Canada, Vol. III, page 110):

In October, 1665, an amendment to the Duke of York's laws, confirmed by Governor Richard Nicholls, provided that "in regard to conditions of distracted persons, they may be both very chargeable and troublesome and so will prove too great a burden for one town to bear, and each town, in the rideing where such person or persons shall happen to be, is to contribute towards the charge which may arise upon such occasion."

This is probably the first formal legal regulation for the care of insane in this country. A practical development of the application of this law was the provision in the "Publick Workhouse and House of Corrections of The City of New York" of quarters for the insane. They were confined here together with the disorderly, the destitute, the aged, and the infirm. The violently insane were confined in a strong room or cage in the west side of the cellar. This Publick Workhouse was built on the site where the City Hall now stands, and its cellar in particular was not over salubrious, for there were complaints of dampness in this neighborhood. During the Revolutionary period this institution con-

tinued to have its manifold uses, for Dr. Elliott quotes a newspaper of the year 1776 with a news incident which relates that five or six English soldiers were detailed to convey a crazy women to the workhouse.

Almost immediately after the Revolution, New York State made definite provision for this class of patients. The first legislation (1787) had reference to the protection of their property, but in 1788 an act was passed for apprehending and punishing disorderly persons which provided as follows:

WHEREAS, there are sometimes persons who, by lunacy or otherwise, are furiously mad or are so far disordered in their senses that they may be dangerous to be permitted to go abroad; therefore,

Be it enacted, that it shall and may be lawful for any two or more justices of the peace to cause such person to be apprehended and kept safely locked up in some secure place, and, if such justices shall find it necessary, to be there chained, if the last place of legal settlement be in such city, or in any town within such county.

New York was a distinct pioneer in the social duty so late come into proper recognition in modern times, the medical care of the insane. The oldest important institution in this country in this regard which can point to a worthy history of well above one hundred years is the Lunatic Asylum founded in New York City in 1791 in connection with the New York Hospital, and still in existence as Bloomingdale Hospital at White Plains. It was in New York, too, that what Hurd calls "the era of the awakening" began with the opening of the Utica State Hospital in 1843. The State Asylums at Willard (1869) and Binghamton (1881) were further developments of the policy of State care for the insane. There had been such awful abuses in the care of the chronic insane in the county asylums and poorhouses throughout the country, that the development of this new policy was sadly needed, and New York set a fine example. It was a New Yorker, too, Dr. Pliny Earle, who just fifty years ago called to the attention of those interested in the care of the insane, the value of occupation of mind and body for these patients just as far as this could be arranged. He thus began a further development of that movement for treating the insane as much as possible like normal human beings, that has meant so much for their proper care and treatment in recent years.

New York's most important contribution to the system of caring

for the insane in this country is Bloomingdale Hospital, or Asylum. As Dr. Russell says in his account of Bloomingdale Hospital in "The Institutional Care of The Insane in the United States and Canada" (Vol. III, page 134):

It is of special interest to students of the history of the institutional treatment of mental disorders in America to find that, even before Pinel and Tuke had accomplished their epoch-making reforms, enlightened physicians and philanthropists of New York were including the mentally sick among the classes of cases for whom they contemplated furnishing hospital care and treatment.

That it was the deliberate belief and intention of the governors that this class of sick persons should be provided for is apparent from the following which appeared in their annual report for the year 1797:

Persons laboring under incurable decrepitude, or long continued ailments of any kind, are considered fitter objects for an almshouse than for this hospital, which is properly an infirmary, for the reception of such persons as require:

- 1st. Medical treatment.
- 2nd. Chirurgical management.
- 3d. Maniacs, and
- 4th. It is contemplated to fit up a lying-in ward, etc.

The accommodations for mental cases were at first in the basement of the New York Hospital, but these were found inconvenient and inadequate, so a separate building for lunatics authorized by the Legislature in 1806 was opened for the reception of patients on the 15th of July, 1808. The legislative incorporation provided for an annual sum of money to be paid to the hospital out of the duties on sales at auction in the city of New York for the next fifty years. Over 200 patients had been treated from the opening of the New York Hospital in 1791 until the opening of the new separate department. When the new building was opened, nineteen patients were removed to it from the other building and forty-eight others were admitted. Dr. Archibald Bruce was the first attending physician in sole charge of the medical treatment of the patients, and required to visit the asylum three times at least every week and oftener if necessary. He was succeeded by Dr. William Handy in 1817, and in 1819 by Dr. John Nielson, who continued to act until July, 1821, when the treatment of the mental cases of the New York Hospital was continued and the work transferred to the new department opened that year.

under the name of Bloomingdale Asylum. The total number of patients treated up to July, 1821, was 1,553.

In 1815 Thomas Eddy submitted a series of suggestions to the Governors of the Lunatic Asylum of the New York Hospital under the title "Hints for Introducing an Improved Method of Treating the Insane in Asylums." Probably the most interesting expression in this runs as follows: "The radical defect in all the different modes of cure that have been pursued, appears to be that of considering mania a physical or bodily disease, and adopting for its removal merely physical remedies. Very lately, however, a spirit of inquiry has been excited, which has given birth to a new system of treatment of the insane, and former modes of medical discipline have now given place to that which is generally denominated moral management."

The question of being enabled to take these hints was referred by the Board of Governors to the Legislature, which appropriated the further sum of \$10,000 a year for forty-one years to enable the Governors to erect further and more extensive accommodations for insane patients, and to introduce medical discipline and moral management. It was then that "a suitable location," in what was at that time, "about seven miles from the City of New York near the Hudson River and fronting on the Bloomingdale Road," somewhat over seventy-seven acres in extent, was chosen for the new buildings. Here, near where St. Luke's Hospital now stands, the Bloomingdale Asylum developed and proved in many ways a model for the country. Its removal to Westchester was necessitated by the growth of the city. It has always maintained its leadership in rational progressive treatment of the insane.

One of the interesting acknowledgments of New York's priority in the matter of caring for the insane is Dr. George Parkman's essay under the title, "Proposals for Establishing A Retreat For The Insane" [in Massachusetts]. Dr. Parkman, on his way home from Aberdeen, where he had received his degree in medicine, obtained from Dr. Lyman Spalding information with regard to the "Lunatic Hospital" in New York which he utilized for his essay. Parkman devoted much of his time to humanitarian purposes, which made his subsequent lamentable murder by a brother physician who probably belonged to the class of persons for whom Dr. Parkman had tried to do so much, all the more sad.

Dr. Hurd, in an article on "The Development of Care for the

Insane in America" (*The American Journal of Insanity*, January, 1913), calls particular attention to what the foundation of the Utica Hospital (1843) meant for the reformation of the extremely lamentable abuses that had crept into the treatment of the insane in county almshouses. These were so bad as to be almost unbelievable, though, of course, they are not at an end even yet. The fact that thousands of cases of pellagra should have developed without attracting notice in our Southern country insane asylums, shows the possibilities of neglect. The foundation at Utica was the first step in the proper State care of these unfortunates and it initiated a new policy in this country. Hurd says:

Here we had an institution built by a State on an extensive and liberal scale, officered by meritorious appointments of officers, with definite laws for the admission and discharge of patients. The definite object was to take the insane out of almshouses and to provide for them in a well ordered hospital; here also for the first time under State charge was provided some accommodations for private patients of the semi-indigent class. The act under which the Utica Hospital was organized has been a model for similar institutions throughout the United States, and has undoubtedly proven an important agent in the development of State care.

After the Utica State Hospital came the Willard State Hospital, named after Dr. Willard, who was prominent in the promotion of the project, but died during the consideration of the bill for its foundation. It was located in the buildings of the State Agricultural College, which had ceased to exist, situated near the village of Ovid, on Seneca Lake. This was particularly for the chronic insane, and has proved a training station for many of the most prominent of New York's alienists and official heads of institutions. In 1866 came the establishment of the Hudson River State Hospital at Poughkeepsie, the first superintendent of which was Dr. Joseph M. Cleveland, who had been trained at Utica. In 1869 the Middletown State Homœopathic Hospital was established at Middletown, New York, the grounds having been purchased with money raised by subscription for a private asylum in which the principles of Hahnemann should be applied to the cure and relief of the insane. The State Legislature took over the institution shortly after its inception, and it has continued to do good work ever since. The Binghamton State Hospital developed out of the New York State Inebriate Asylum founded in 1854. It was taken over by the State in 1879.

An institution that deserves special mention in the history of the care for the insane in New York State is Providence Insane Asylum, now Providence Retreat, of Buffalo, the oldest institution for the care of the insane in Western New York. It was established by the Sisters of Charity in 1860, and owes its foundation to a visit paid by Sister Rosaline Brown to the County Hospital where the insane of this portion of the State were confined at this time, there being no State Hospital nearer than Utica. She was deeply touched by the lamentable conditions in which these poor patients were detained. Many of them were in chains, and not a few of them were tied to posts or fastened to stationary chairs. Some of them were almost without clothing, nearly all of them were in a sad condition of uncleanness, some of them were positively filthy, their food was of the poorest, and little attention was paid to their wants. She made the resolution during her visit to bring about the foundation of a hospital for these needy patients. She secured permission from her Superiors, and begged and borrowed money from friends in Buffalo, among them many of Buffalo's prominent citizens, until she was able to purchase thirty acres of land and erect a building thereon. The Civil War came immediately afterwards and there was a hard struggle to maintain the hospital and care for the patients properly. Water had to be brought in barrels for a mile or more, but success crowned her efforts. For many years the majority of the patients were county charges until the development of State institutions furnished proper provision for these, when the Providence Lunatic Asylum became what is now the Providence Retreat for the care of private insane patients.

Before the close of the eighteenth century, New York was brought face to face with the serious question of the responsibility of insane murderers. In 1799, one John Pastano was convicted of murder and sentenced to be executed. His insanity was manifest, and the Governor, having no power of pardon, appealed to the Legislature, which passed a law granting full pardon and discharge from the conviction on condition "that the said John Pastano should continue confined in prison until the assurance which had been made of security being given that he would be immediately sent to Madeira where his relatives reside." A similar case came up in 1816 and was disposed of in the same way, except that, as he was a native, his relatives were required to furnish assurance that

he would be henceforth properly cared for in a "lunatic hospital."

These cases led to legislative developments, but not until 1827 when a law entitled "An Act Concerning Lunatics" was passed providing that: "no lunatic shall be confined in any prison, gaol, or house of correction, or confined in the same room with any person charged with or convicted of any criminal offence. But he shall be sent to the asylum in New York, or to the county poor-house or almshouse, or other place provided for the reception of lunatics by the county superintendent (of the poor). If such person is not possessed of sufficient property to maintain himself it shall be the duty of the father and mother, and the children of such person, being of sufficient ability, to provide a suitable place for his confinement and to confine and maintain him in such manner as shall be approved by the overseers of the poor of the city or town."

In 1858 came the establishment of the first State Lunatic Asylum for the care of insane convicts on the prison grounds at Auburn. All the criminal insane of the State were cared for there for thirty-five years until 1892, when the Matteawan State Institution for the Criminal Insane was opened at Fishkill-on-the-Hudson. Up to 1859 the criminal insane were committed to institutions for the civil insane, but this was a source of serious complaint. Relatives and friends of the civil insane very properly objected to enforced association with the dangerous criminal insane, and those in charge of insane hospitals protested that their work was seriously hampered. Auburn soon become overcrowded, but relief was not afforded until an Act of the Legislature in 1886 authorized the building of Matteawan, in Dutchess county. A very rapid increase of the criminal insane occurred toward the end of the nineteenth century, and in 1899 the Legislature authorized the building of Dannemora State Hospital for insane convicts on ground adjacent to the State prison at Dannemora. Within two years the number of inmates exceeded the projected capacity of the buildings. There has been much difficulty in providing new buildings to meet the increased requirements. There is every reason to believe that by the time the institution planned for 650 inmates is completed, it will be, as it is now, seriously overcrowded.

One of the leading spirits in Psychiatry in this country, to whom America owes much for the amelioration of the conditions

of care for the insane, was Dr. Pliny Earle (1809-1892). He received his early education at the Friends School, Providence, Rhode Island, and his degree in medicine from the University of Pennsylvania in 1837. His breadth of view in his specialty was doubtless due to the fact that he spent several years after his graduation studying conditions in Europe. After being resident physician to the Friends Asylum, Frankfort, Pennsylvania, he became superintendent of Bloomingdale Hospital in New York in 1844. After five years' service he went to Europe for further special study, and came back to be visiting physician to Bloomingdale, and lecturer on mental diseases at the College of Physicians and Surgeons. He was one of the founders of the American Medico-Sociological Association, and its president in 1884. He wrote a large number of papers on insanity, and summarized the results of his experience during his visits to European asylums in two books which were widely read.

One of the distinguished psychiatrists of New York was John Perdue Gray (1825-1886), who was a graduate of the University of Pennsylvania in medicine in 1848, and three years later became assistant physician to the New York State Asylum in Utica, of which he became the superintendent when only twenty-eight. His influence, probably more than that of any other, raised the standard of care for the insane in New York, while his contributions to the subject of responsibility, especially in criminal cases, did much to create a right feeling at a time when newer ideas on this matter were tending to run away with conservatism. He was the first to establish the microscopic study of the brain in this country, and he helped to give the finishing stroke to the theory of the so-called moral insanities exemplified by dipsomania, kleptomania, and other single peculiarities of patients, which he did not recognize as true insanity.

One of the men who did much for the proper development of care for the insane in New York State was Dr. Joseph Manning Cleaveland, who was the first to suggest that for state institutions the term "asylum," which had come to carry a certain stigma with it in the popular mind, should be changed to that of "hospital." His idea was that the change of title might also help to change the usually accepted significance of the purpose of the institution. State institutions for the insane were to be as far as possible not merely places where the insane were kept because they had to be put

somewhere, but where their cases were properly studied and their symptoms treated and their general condition improved so as to give them the chance to get back into life once more if that was possible. For some twenty-five years he was the superintendent of the Hudson River State Hospital at Poughkeepsie, and he did much to efface the stigma of neglect and cruelty toward patients which had been a tradition, in the care of insane patients under the old county system.

CARE OF THE FEEBLE-MINDED AND EPILEPTICS

New York State was a pioneer in the organized care in a modern way of these two classes of defectives—the feeble-minded and the epileptic, whose proper disposal came to be such an important social problem during the later nineteenth century. The first attempt in this country to found a public institution for the feeble-minded was made in New York State in 1846, when a bill for this purpose was introduced into the Legislature by Dr. Frederick F. Backus, of Rochester. This bill did not become a law until 1851, and the institution then founded in accordance with it was established only on an experimental basis in Albany. Two years later the Legislature provided funds for the erection of permanent buildings on a site in Syracuse, donated by philanthropic citizens. The corner-stone of the main building was laid September 8th, 1854, in the presence of distinguished guests, among whom was Dr. Edward Seguin, whose work in France had been the inspiration of the first efforts made in America for the training of the feeble-minded.

The first superintendent of this Syracuse State Institution for Feeble-Minded Children was Dr. Hervey Backus Wilbur (1820-1883) to whom so much is owed here in America for the development of proper care for the feeble-minded. He was born in Massachusetts, graduated from Amherst in 1838, and from the Berkshire Medical College, Pittsfield, in 1842. Shortly after he began practice he became interested in Seguin's book on the teaching of the feeble-minded at Bicêtre, and as a result, in his own house at Barre, Massachusetts, he opened the first school for idiots in this country. When the New York law establishing an experimental school for this same purpose at Albany in 1851 went into effect Dr. Wilbur, at the instance of Dr. Backus was invited to take charge of it. When the

manent by the erection of the institution at Syracuse, he became superintendent, a position which he occupied for nearly thirty years. Just within the main entrance to the institution is a marble tablet bearing the inscription, "Hervey Backus Wilbur, M.D., the first in America to attempt the education of the feeble-minded, and the first superintendent of this Asylum. By his wisdom, zeal and humanity, he secured its permanent establishment."

New York was fortunate in having for some years the benefit of the presence of the elder Seguin, who probably did more than any one else in the nineteenth century to put the care and education of the feeble-minded and of backward children generally on a scientific foundation. His studies in France were made at Bicêtre, the great asylum for the insane and feeble-minded outside of Paris, and in 1846 he published the well-known treatise, "*Traitement Moral, Hygiène et Education des Idiots et des autres Enfants arriérés*," which was crowned by the French Academy—a work still often consulted by those especially interested in this subject. In 1850 he felt forced to leave France at the time of the usurpation of Louis Napoleon, and spent most of the rest of his life in this country. From 1854 to 1857 he was at the Syracuse Institution for Feeble-Minded, aiding Dr. Wilbur in its organization. He assisted in the establishment of new institutions of a similar character in Massachusetts, Connecticut, Ohio and Pennsylvania. He visited France for a time, but settled in New York in 1863 and devoted himself for the next twenty years till his death in 1880 to improving the conditions of the care of the feeble-minded and laying down the principles on which their education should be conducted. He endeavored to improve the condition of the idiot asylum on Randall's Island and to train teachers for them. In 1866 he published his well-known treatise on "Idiocy and its Treatment by the Physiological Method" (New York, 1866). In the meantime he was in constant correspondence with European institutions as well as those of this country, and he often read papers before the medical societies, calling attention to these badly neglected patients.

Dr. Seguin was very much interested in securing proper living conditions for normal as well as abnormal children. He pleaded for open-air schools in our parks in connection with the kindergarten system, especially for the younger children, long before that idea gained the hold that has enabled it to be put into execution at

various points in much more recent years. He suggested that a good many of the children in our public schools who are behind their mates were not necessarily of deficient intellect, but were often handicapped by physical impairments of various kinds, sensory and nutritional, which kept them from employing the intelligence they had to the best advantage. To him more than any one else we owe the gradual awakening of attention to a series of questions that are now recognized as of paramount importance in education in this country.

A New York Institution which, though little known, represents another pioneer medical activity of the State, is the New York State Custodial Asylum for Feeble-Minded Women, situated at Newark, N. Y. Its history dates back to the time when it was opened as a branch of the Syracuse State Institution for Feeble-Minded Children in 1878. The purpose of the institution is to segregate women of the child-bearing period who are unsuitable for motherhood and require care and surveillance. It was opened to provide a place for feeble-minded females who were too old for a children's institution, and it has accomplished great good. The capacity of the institution is 853 inmates, and there is generally a long waiting list. Every effort is made to make it as much of a home as possible so that it is conducted as an open institution, without locked doors and fences. When the women reach the menopause they are removed from the institution by the authorities who brought about their commitment. New York has been in this a leader in a needed reform.

In 1894, owing to the operation of the State care act by which the feeble-minded were being separated from the insane, the number of these patients requiring special care led to the establishment of the Rome State Custodial Asylum. The capacity of the institution gradually grew to 1,600 as the needs for it became demanding, and it is a thoroughly modern institution situated on a farm of one thousand acres of land with four detached farm colonies for boys, accommodating a farmer and his wife and twenty inmates each, on from one hundred to three hundred acres of land, and a working girls' colony situated in Rome and providing for thirty girls who earn their own living doing domestic work.

The most important development of care for the feeble-minded came with the establishment of Letchworth Village, a State institution for the care of feeble-minded and epileptic persons at Thiells,

Rockland county, New York. Its site comprises an area of 2,100 acres, with a stream, Minnisceongo creek, of an average width of forty feet, which serves as an excellent natural boundary for the separate areas in the village occupied by the males and females. The institution was open for the admission of children on July 11th, 1911, but it is proposed to provide for the housing of approximately 3,000 persons in four groups: trainable boys; men and infirm males; trainable girls; women and infirm females. The adults of each sex are to be located near the infirm of their own sex to provide for the utilization of the able-bodied in the care and nursing of the infirm cases. The buildings for the males are situated near the farms, so as to be near their special work, while the women are located near the laundry, for the economical utilization of their services in these departments. Letchworth Village probably represents the best development up to date of organized scientific care for the feeble-minded.

SPECIAL CARE OF EPILEPTICS

New York began early its recognition of the necessity for special care for the epileptic. In 1873 Dr. Ordronaux referred to special provision as made for the epileptic on Blackwell's Island. In 1879 the New York State Board of Charities declared "that epileptics need intelligent oversight and care equally with the insane, both on account of their helplessness and dangerous tendencies, is fully and very generally recognized." At this time there were probably special wards in many of the insane asylums for epileptics, but the State Board of Charities felt that "the Legislature ought to give thoughtful and earnest consideration to the necessity for further particular provision for the epileptic."

During the later eighties Dr. Frederick Peterson, of New York City, brought to public attention the necessity of providing a separate institution, preferably a colony for the state's epileptics. This culminated in the appointment as a committee of the State Charities Aid Association, of Dr. Frederick Peterson and Dr. George W. Jacoby, to investigate the subject of State provision for epileptics. Their report led The State Charities' Aid Association to introduce into the Legislature a bill for the selection of a site for such a colony. This failed to pass in 1890, but became a law on May 12th, 1892, and the commissioners appointed by the State Board of Chari-

ties, Hon. Oscar Craig, Hon. William P. Letchworth and Mr. Peter Walrath, recommended the purchase of the Shaker estate at Sonyea. In 1894 the Legislature purchased the nearly 1,900 acres of the Sonyea property for \$115,000, and it was named Craig Colony, in honor of the president of the State Board of Charities. Thus came into existence the first colony for epileptics in this country, and the first institution in which the colony system was applied to the care and treatment of persons suffering from chronic disease. The first board of managers consisted of Dr. Frederick Peterson, president; Mrs. C. F. Wadsworth, Dr. Charles E. Jones, Mr. W. H. Cudeback; and Mr. George M. Shull, secretary. They assumed office April 25th, 1894. Dr. William P. Spratling was appointed medical superintendent, November 17th, 1894. He had previously been first assistant physician at Morris Plains State Hospital, New Jersey. The first patient was not admitted until January 27th, 1896. The number increased rapidly in accordance with the growth of accommodations until after five years there were nearly 1,400. The number of buildings now at the colony is over 100. The patients' cottages vary in size, accommodating from 15 to 175. Most of the buildings do not accommodate more than fifty patients. Through the centre of the tract dividing it into two about equal portions, flows the Kishaqua creek, which serves admirably in providing a natural barrier for the separation of the two sexes. The present superintendent, Dr. William T. Shanahan, has done much to make it a model institution.



CHAPTER XIV

THE SANITARY REVOLUTION IN NEW YORK

ALL during the first half of the nineteenth century as New York's population grew more and more dense, the sanitary condition of the city grew worse and worse until finally an almost impossible state of affairs developed. New York was subject to periodical visitations of cholera, typhus fever and small-pox. There were besides a large number of cases of infectious intestinal diseases, *cholera nostras*, the dysenteries, and above all the fatal diarrhetic diseases of children. The death-rate of the city was nearly forty per thousand of population. This was at least twice and a half the death rate of reasonable sanitary conditions, yet nothing was done to bring about improvement, and the public generally could not be impressed with the necessity for making such sanitary regulations and enforcing them as would lower the death-rate and at the same time lessen the incidence of disease. For while the mortality rate was so high, the morbidity rate was at least proportionately high, and especially in the poorer districts, where a family living in one of what were called the "tenant houses" felt particularly fortunate if no member of the family was for the moment suffering from any of the many almost constantly current infectious diseases.

Cholera and typhus fever came into New York practically unrestricted whenever there was an epidemic of that disease in the European cities with which we traded, or from which we received emigrants. From New York the disease usually spread to other cities throughout the country, though of course there were other ports of entry through which, though with much less frequency, these foreign infectious diseases came. Even this menace to the country did not arouse the attention of people generally to the danger involved in the neglect of health in New York City. Cholera came over and over again, and its virulence may very well be realized from a reminiscence of Dr. Thomas Addis Emmet, who was in charge of certain temporary buildings in which "fever

cases'' were housed on Blackwell's Island during these epidemics. He recalls that on two occasions when he came back to the Island for his daily visit, he found every person whom he had left in his wards the day before, orderlies as well as patients, dead.

Typhus fever, which came often, was scarcely less virulent. The great famine occurred in Ireland in the late forties, and for years the people did not have sufficient to eat. Another familiar name for the disease is famine fever and it became endemic in Ireland and in the indigent state of the people there was little chance of getting rid of it. They were practically driven to emigrate and coming in sailing vessels, huddled together almost passing belief in the holds, with insufficient food, the fever which was often known also as ship fever because these conditions so favored its spread, broke out among them, and often carried off large numbers of them. The one thing that saved this country from even more frequent epidemics of the disease was the fact that the voyages in sailing vessels took so long that the disease had often run its course, carrying off all those of lowered resistive vitality, and those who were left had gotten beyond the infective stage before they landed. No wonder that the disease was known as the "Irish fever" in this country, and often spread with great virulence in the crowded living quarters into which the Irish of that day, with the well known hospitality of the race, were ready to welcome the new comers who had just landed.

Under these circumstances only the most careful regulation of the health of the community would have prevented the spread of epidemic diseases. As it was, the supervision of the health of the city was entirely in the hands of politicians, and absolutely nothing was done except distribute the patronage provided by the large sum of money,—a million of dollars, allowed for inspection purposes. Every attempt to change the legal status of the health organization of the city was defeated in the legislature by the politicians, who were interested in maintaining the awful condition of affairs that obtained because of the money there was in it. A number of distinguished New York physicians—Dr. John H. Griscom, Dr. Joseph M. Smith, Dr. Elisha Harris, and others, had written emphasizing the need for a reform of New York's health regulations. These writings, however, attracted the attention only of physicians as a rule, and effected no good purpose so far as sanitary reform was concerned. The New York Academy of

Medicine over and over again passed resolutions asking for the enactment of proper and adequate health laws, but no results were secured.

Dr. Stephen Smith in his book, "The City That Was," has told the awful story of the almost unspeakable conditions of the city's health in the middle sixties. He was himself a most important factor in bringing about the reform that was finally accomplished. Having completed his services as resident physician at Bellevue Hospital, where large numbers of typhus cases were being treated, he was placed in charge of the tents for such infectious diseases on Blackwell's Island, by the Commissioners of Charity. Soon after taking up the service he noticed that many of his patients were continually admitted from a single address in East 22nd street. He took occasion to visit the building and was not surprised at the many cases of fever which it furnished the hospital. The building had been abandoned by its owner and was occupied by vagrants, mainly immigrants who found there a shelter from the elements, but encountered many dangers of much more serious character which they did not realize. "The building was in an extreme state of dilapidation, the doors and windows were broken, the cellar was partly filled with filthy sewage; the floors were littered with decomposing straw which the occupants used for bedding; every available place from the cellar to garret was crowded with immigrants—men, women and children. The whole establishment was reeking with filth and the atmosphere was heavy with the sickening odor of the deadly typhus which reigned supreme in every room."

The agent for the property, who collected no rents, refused to reveal the name of the owner, and a suggestion to him to have the house vacated and put in good condition for tenants was contemptuously refused. There was no health department, and when the police were consulted, the head of that department found that there was neither law nor ordinance under which the police could take action. They secured the name of the owner from the tax lists, however, but when he was consulted he was very angry at what he declared an interference with his rights as to the management of his property as he pleased. He asserted in the most emphatic manner that as the house yielded him no rent he would not expend a dollar on the miserable creatures who had so wrecked the building. With the failure of this appeal to the owner, Dr. Stephen Smith, who was following up the case, felt that he had exhausted

every legal and moral means of abating a nuisance dangerous to life and detrimental to health.

An appeal was made to Mr. William Cullen Bryant, then editor of *The Evening Post*. Mr. Bryant proposed to make the case public in all its details. The owner was a wealthy man living in an aristocratic neighborhood, a member of one of the most popular churches of the city. It was felt that publicity would probably reach him, though a sense of duty had failed. Though there was no law in the matter, the owner was required to appear at the Jefferson Market Court and when he found that the whole matter was to be made public he promised to make all necessary improvements. He fulfilled his promise so well that this became one of the most attractive tenements in that East Side district, and was for many years free from the ordinary contagious diseases of the tenement houses. He afterwards thanked Dr. Smith for his insistence.

The case attracted a great deal of attention, mainly because of the revelation of the fact that there were no laws under which such a glaring violation of the simplest principles of health and even of common decency could be at once corrected. Prominent citizens, physicians, lawyers and clergymen organized the Sanitary Association in order to bring about sanitary reforms. They drafted a bill for the establishment of the health department, but it was defeated. When the bill came up for a hearing before the Legislature, the City Health Inspector's agents in whom were vested all the health powers such as they were, and whose department would be legislated out of existence, denied every allegation as to the unsanitary condition of the city.

In order to secure definite information, a sanitary inspection of the city was determined on and this work was completed during the summer months of 1864. The corps of inspectors consisted of young physicians, each assigned to one of the districts into which the city was divided. Their reports were afterwards edited by the secretary, Dr. Elisha Harris, and published by the Association in a volume of over five hundred pages. The total cost of this inspection and publication was \$22,000. It was well worth the expense, for it led to the reform of the health conditions of New York City. This volunteer sanitary inspection of New York attracted wide attention and was declared by European health authorities to be a most remarkable and creditable advance in the history of municipal reform. What it accomplished has served as the basis

for the organization and reform of health departments throughout the country.

The details of that inspection are almost incredible. They may be read in the volume issued by the Association, or in condensed form in the chapter of Dr. Stephen Smith's book, "The City That Was," which bears the title, "New York the Unclean." Some of the details of the overcrowding and the awful unsanitary conditions which obtained deserve to be recalled in order to show the magnificent reform which this voluntary Sanitary Association effected, the incentive for which was due to prominent New York physicians. Its achievements are almost entirely owed to the unfaltering persistence of these men in the work of securing legislation for the reorganization of New York sanitation.

Some of the descriptions presented by the inspectors would be quite beyond belief, only that we have them on the evidence of actual eye witnesses. Here for instance are two paragraphs descriptive of conditions which, unless they were actually set before us in this way, we could not be brought to accept as absolutely existent in the New York of scarcely fifty years ago, yet it must not be forgotten that these reports are not hasty unauthoritative documents gotten up merely to influence legislation, but sworn descriptions of actual observations made by physician inspectors:

Five small houses, two and a half stories in height, including the basements, each containing apartments for six families, front on an alley called Rivington Place. This alley is always in a filthy condition. The houses on it are all small and overcrowded. The thirty families that reside in these five houses have no other water supply than that which two hydrants furnish in the exterior courtyard; *while for this population of nearly 200 persons, of all ages, there are but two privy vaults*, and, at the time of the last inspection of the quarters, these vaults were filled nearly to the surface. In the year 1849, forty-two individuals died here in three weeks of cholera, and not one recovered that was taken sick. The reasons are plain: they have no ventilation, and the houses being double, the exhalations from one apartment are inhaled by the occupants of the other.

At No.—West 25th street, a wretched tenement of two apartments, the rooms occupied by one family. The sitting-room is about 10x12 feet, and the bedroom about 5x12, without a single window or air hole. These rooms were occupied in the hot month of July by a colored female having pulmonary consumption, and her two children. Here she died, shortly after we made the inspection of the domicile; *having no money nor friends, a Christian burial was denied her for four days, although the neighbors*

acquainted the police of the fact, and they the Health Warden." (Italics ours.)

Here are further unsavory details of a neighborhood known because it was the home of a great many gatherers of such unconsidered trifles as rags and bones and junk of various kinds as "Rag Pickers' Row."

The houses are of wood, two stories, with attic and basement. The attic rooms are used to deposit the filthy rags and bones as they are taken from the gutters and slaughterhouses. The yards are filled with dirty rags hung up to dry, sending forth their stench to all the neighborhood, and are exceedingly nauseous, operating upon me as an emetic. (This from a physician usually somewhat hardened to smells from the old time dissecting rooms.) The tenants are all Germans of the lowest order, having no national nor personal pride; they are exceedingly filthy in person, and their bed clothes are as dirty as the floors they walk on; their food is of the poorest quality, and their feet and hands, and doubtless their whole bodies, are anasarcous, suffering from what they call rheumatism, but which is in reality a prostrated nervous system, the result of foul air and inadequate supply of nutritious food. They have a peculiar taste for the association of dogs and cats, there being about fifty of the former and thirty of the latter. The whole number of apartments is thirty-two, occupied by twenty-eight families, number 120 in all, 60 adults and 60 children. The yards are all small, and the sinks running over with filth.

How much living conditions have improved even in the worst of our slums may be gathered from some of these reports. Inspectors reported many instances in which one or more families of from three to seven or more members of all ages and both sexes were living together in a single often rather small room. Here they ate, drank, dressed and undressed, slept, and often worked at some trade without any possibility of that privacy "which an innate modesty imperatively demands." Another inspector wrote that some of these houses seemed to be always open to newcomers, and in some way or other to be able to accommodate them. He declared, "I have found three families of men, women and children in one room; there they lived and there they slept." As he comments, there was not only danger of physical disease but of moral degeneration under these circumstances, and it would have been quite impossible to expect good citizenship among those raised under such circumstances.

There were a great many underground or cellar dwellings. Some of these cellars were so dark that one could not see to read in them

unless by artificial light, except for a few hours in the day, and then only by sitting close to the window. There were many basement rooms "into whose gloomy recesses not a single direct ray from the sun ever shone." There was very little chance for circulation of air, and it would be difficult to imagine a human being more completely beyond reach of sanitary provision. "Sometimes four large families crowd this subterranean floor." It is easy to understand how the resistive vitality of such people dwelling under these circumstances was reduced to so low an ebb that they readily became victims of any disease that they might in any way be exposed to. Altogether nearly twenty thousand people were found to be living in more or less underground apartments. The "tenant house" population of New York, as it was then called, was estimated by the police to reach the enormous figure of 500,000, or about half the total of the population of the city. These were all living in overcrowded quarters, with deficient sunlight and fresh air. The epidemics of disease were sometimes spoken of as visitations of Providence, but they were really due to selfish greed and man's inhumanity to man.

With such excellent material provided for them to act upon at once, typhus, typhoid fever, cholera, dysentery, scarlatina, and above all diphtheria and small-pox, worked havoc. The throat diseases are particularly likely to be frequent in such an environment as existed in many of these crowded "tenant" houses. The collection of statistics among those occupied in the sewers of Paris and in connection with sewage disposal in London and the sewage farms in Berlin, show that, quite contrary to the supposition in the matter, intestinal diseases are not more frequent among them than among the general population, but throat diseases are. The constant inhalation of sewer gases irritates the throat and lowers its resistive vitality, leaving it more liable to attacks of various kinds. Very probably the tonsils and adenoid tissue of this neighborhood which are meant to be protectors of the system, gradually become overloaded with bacteria which they are unable to dispose of, and then serious throat affections of various kinds, quinsy, diphtheria, and deeper systemic affections such as the various kinds of rheumatism and probably also infectious myocarditis, develop. Almost nothing was understood of this at that time, but it is easy to comprehend now what serious breeders of disease of all kinds these conditions were. Above all, it is easy to understand how fa

the epidemics of diphtheria and scarlet fever, the essential throat diseases, were.

While the inspectors said nothing of the plague of flies which must have accompanied the presence of such filth widely distributed and in large amounts in a climate that can be so warm and moist as New York in the summer time, it is easy to realize now what an immense number of these insects must have been present, carrying here and there the germs of disease. Inspectors who see flies buzzing around the open mouth of a sewer in our time know that they are likely to be carriers of the diarrheic and intestinal diseases, and see the results in the deaths from so-called summer complaint among the infants of the city. Even at that time, however, they appreciated the connection between the open sewers and enteric diseases in the neighborhood. The inspector of the Ninth Ward, for instance, said that he found among the people living near the mouth of an open sewer, no less than twenty-nine cases of dysentery and diarrhea, five of which had terminated fatally, all of which had developed during the three weeks immediately preceding his inspection.

Some of the conditions deserve to be on permanent record for the sake of the warning they may provide of the possibilities of awful living conditions to which persons may be subjected by those who think only of the money that may be made out of others. The inspector of the Fifteenth Ward reported: "In a dark and damp cellar about eighteen feet square and seven feet high, lived a family of seven persons; within the past year two have died of typhus, two of small-pox, one has been sent to the hospital with erysipelas. The tops of the windows of this abode are below the level of the surface, and in the court near are several privys and a rear tenant house." The inspector adds, "yet this occurred but a very short distance from the very heart of the city."

Indeed, the surprise is how many of these houses with awful living conditions, overcrowded beyond all reason, insanitary almost beyond imagination, reeking with filth, breeding disease, were situate in quarters of the city where one would least expect to hear of them. Indeed, the supreme danger of the insanitation of the time was that it was widely spread and to be found in nearly every quarter of the city within but comparatively short distances of busy, business districts, or even, impossible as it may seem to us
30. of fashionable residence quarters. Sometimes these

unspeakable "tenant houses" were built on what might readily have been and indeed have become since, airy, healthy, fashionable districts. "The Great Eastern" was the name of one of the famous or rather infamous "tenant houses" of 1865, and it was situated at No. 115 East 37th street, the very heart of what is now the fashionable Murray Hill restricted residence district.

Many of these rookeries rejoiced in names that had been given them usually by their early occupants, and which were not at all so æsthetic as those now carefully selected by owners for apartments. "Rag Pickers' Row" and "The Great Eastern" have been mentioned, but there was also "Rotten Row" and "Quality Row," and then "Sebastopol," "Gotham Court Rookery," situated on Cherry street; "Bummer's Retreat," and many others; while Cat Alley and Dog Alley were local designations connected doubtless with the special fauna of the thoroughfares.

Before the Legislature, in order to secure proper attention to conditions, Dr. Stephen Smith in presenting the report had to dwell particularly on two phases of the insanitary conditions of New York City which affected closely the voters for these representatives. It is doubtful whether any appeal for the sake of humanity itself or for the betterment of conditions for these poor suffering people, would have meant very much in the face of the organized political situation which existed. It had to be brought home to legislators, however, that they themselves and their families were in danger from the epidemics of disease which arose in these insanitary quarters, gaining virulence so that they spread throughout the city. Besides, they had to be reminded that there were a good many ways by which the contagion of disease could be directly conveyed to themselves and their families and to the better-to-do classes in their districts on whose votes they depended for reelection. Above all, legislators representing the country districts far away from New York had to have it made clear for them that New York had literally become a distributing point for diseases of many kinds, and that the smaller towns and country districts were often severe sufferers not only as regards disease, but also monetarily and commercially, because of their intimate business relations with such a focus of infections.

The inspectors called attention to the fact that small-pox particularly was widely diffused, so that no wonder there was an epidemic every five years or so, that is, whenever the protection from

vaccination which people were usually scared into securing whenever an epidemic prevailed, wore off to some degree, and when children had grown enough to be outside of the house and thus come in contact with the widely disseminated germs of the disease. Dr. Stephen Smith gave some details that would seem almost impossible only that they are substantiated by actual sworn reports:

I hold in my hand a list of cases of small-pox found existing under circumstances which show how widespread is this disease. Bedding of a fatal case of small-pox was sold to a rag man; case in a room where candy and daily papers were sold; case on a ferry boat; woman was attending bar and acting as nurse to her husband who had small-pox; girl was making cigars while scabs were falling from her skin; seamstress was making shirts for a Broadway store, one of which was thrown over the cradle of a child sick with small-pox; tailors making soldiers' clothing (this was during the Civil War), having their children from whom the scabs were falling wrapped in the garments; a woman selling vegetables had the scabs falling from her face among the vegetables, etc., etc. etc.

The inspector of the Fourth Ward dwelt particularly on the fact that some of the workshops of various kinds in which goods were made for sale even in the better quarters of the city, were often, owing to the crowding, also the sick rooms in which people suffering from some of the worst infectious and most contagious diseases were being cared for. He said, "In localities where small-pox prevailed I found in some instances within a few feet of the patients, tailors at work for our best clothing establishments." He adds, "When the occupant of a crowded 'tenant house' procures from such a source a coat or a blanket, it is not surprising that a loathsome pest attacks the young and unprotected members of his family, and ultimately spreads through the entire quarter, destroying life after life and endangering the health of a whole community."

No wonder that a distinguished president of the New York Academy of Medicine once suggested that one of the ways of recognizing small-pox was by the mousey smell peculiar to itself which the disease had and which was pathognomonically characteristic. Physicians must indeed have grown very familiar with that smell so as to be able easily to recognize it, for odors represent the one form of sensation that we have found it most difficult to classify describe for recognition purposes. This president of the Acad-

emy recalled the fact that he had once been in a stage in the evening on Broadway on the way to the theatre with his wife, when he got a whiff of this peculiar mousey smell, and looking around him discovered that one of his fellow passengers in the stage was in the midst of the remission from the fever which comes after the eruptive phase of the disease.

What is always true is, that there is a solidarity in health matters among the various parts of the city in spite of the apparent seclusion of the better-to-do classes from the very poor. The workers in the crowded tenements are by their work brought often in very close contact with even the wealthy, through the stores, and unless great care is exercised and inspection insisted on and regulations enforced, abuses of far-reaching effect soon become manifest. Over and over again our garment workers have proved to be disseminators of disease, not so much through their own fault, as through the awful conditions under which they have been compelled to live and work, and nature has apparently taken her revenge for them by making their products carriers of disease. Every increase in the wages of the poor working in crowded tenements has redounded not only to their benefit, but to that of the health of the whole city. At this time the conditions that had developed were awful. The inspector of the Fifth Ward, for instance, reported, "the largest wholesale establishment for the sale of dry goods on this side of the Atlantic Ocean is in immediate contact with the tenant houses of the worst class, which are infested with small-pox and typhoid fever."

What were just coming to be called the "filth diseases," because it had been recognized that instead of being due to any incomprehensible but virulent change in the atmosphere, or to any taking on of infectious quality by the ground water, or any mysterious disturbances of the air, they were just the result of human carelessness and the accumulation of dirt, were reported in large numbers in practically every ward in the city. This was particularly true as regards the children's diseases. The inspector of the Eighth Ward reported: "Cholera infantum has probably consigned many more to the grave during the past summer than all the other diseases in my inspection district. In every case examined I have found it associated with some well marked source of insalubrity; vegetable and animal decomposition have been the most prominent causes. That fifty per cent. die from preventable disease in my

inspection district, I do not doubt." The inspector of the Sixth Ward says, "The mortality among children is fearfully high. Many families have lost all their children; others four out of five or six."

Dr. Smith pointed out that, excessive as was the death rate, this was by no means the full measure of the penalty which New York City paid to the demon of filth. It is estimated by competent authority, he said to the Legislature, "that there are twenty-eight cases of sickness for every death. What an enormous amount of unnecessary sickness exists here in our midst. I have an accurate census of many groups of families of that portion of our population who live immured in filth, and here we find the constant sickness rate excessive. It is no uncommon thing to find it fifty, sixty and seventy per cent." He further pointed out that while wards inhabited principally by the wealthy and with but few tenant houses have a death rate of but seventeen per thousand, scarcely more than the inevitable mortality, the Sixth and Fourth Wards have a death rate of more than twice that. A number of tenant houses with crowded populations have death rates from sixty to seventy per thousand. One large tenant house in the Sixth Ward, of rather average than exceptional condition, with seventy-four families and 349 persons, had eighteen deaths in a year, or fifty-three in a thousand, one in three of its occupants constantly sick, and one in six of its children in the annual mortality.

Fever nests were pointed out everywhere. There was a fever nest, for instance, in East 17th street, another not far from Broadway and Fifth avenue, a third at East Eleventh street between First and Second avenues, in a horribly filthy condition. One is not surprised to find "a notoriously filthy house in Mulberry street with a population of about 320, which is renewed every few months. There is no wonder that it has to be renewed, for during about four years there have been no less than sixty deaths by fever in this single house and 240 cases. To-day this fever is raging uncontrolled in that house, creating more orphans than many well fought battles. A tenant house on East Seventeenth street which reeks with filth, gives the same story. Upward of eighty-five cases of typhoid fever with a large percentage of deaths occurred in this single house during the past six months. And *still it remained unclean and open to new tenants.*" That is perhaps the most surprising thing, that people did not hesitate to move into quarters from which others had just been moved out to the hospital or which had

been evacuated practically by death. There is a fatalism about the poor that one usually would think of as Mohammedan rather than Christian, and they faced their fate as if it were destiny and inevitable.

For the impression of the up-State legislators a series of cases of small-pox and other diseases contracted because persons who had visited New York City acquired the contagion there, were included in the report. At Cooperstown twenty-six cases of small-pox were traced to a person who manifestly acquired the disease at a hotel in New York City, in the room in which a patient with the disease had recently died. A woman travelling from New York to Buffalo fell ill on the train and had to be carried from the cars of the Erie railroad to the State Line road at one of the many connections of that time. Four deaths were directly traceable to this exposure of railroad men who came in contact with the sick woman. She communicated the disease further at Columbus, Ohio, where three deaths resulted. Two men who came to the city from Western New York to sell horses were attacked with small-pox some days after their return, and communicated their disease to others. A physician of Delaware county mentions the case of a merchant of that place who came to this city with his wife and went to one of our most frequented hotels. Being very much fatigued, they retired to the room provided for them, without any particular examination of it, but found in the morning that they had been put in a room from which a patient with small-pox had just been removed, without its having been cleansed. Both suffered from malignant small-pox.

The Fifth Ward at that time was the very busiest part of the city, containing the principal passenger station, that of the Hudson River Railroad, and in it were many of the ferries leading out to railroads on the other side of the North river, by which many thousands of people entered and left the city every day. The district was not unlike that which centers around the Grand Central Station in our time, though if anything more crowded by traffic of all kinds. The inspector of this Fifth Ward gave a very vivid picture of the conditions of disease which existed in this immediate neighborhood. This ought to have been enough of itself without more ado to make not only the city folk and voters for legislators realize that there must be reforms, but must also have made those who traveled from the country into the city feel very

uncomfortable over the danger they constantly ran. The inspector said:

The two freight depots and the principal passenger depot of the Railroad Company are in the same close association with these nests of infection. In the region immediately surrounding are also situated several hotels and a large number of boarding-houses, whose inmates are thus in danger of personal contact with these diseases any moment. West Broadway, running through the very centre of the district, is traversed by five different lines of railway cars, with an average of five cars passing every minute, and carrying millions of passengers yearly by the very doors of these houses. Broadway, at but a short distance removed, is the principal thoroughfare of the city. Hudson street on the west is also a leading route for city travel; and the cross streets of the district are traversed daily by multitudes to reach various lines of steamboats, cars, and steamships, which leave the city opposite this point.

All this large amount of daily travel passes through a region always containing cases of typhus fever, and largely infected with small-pox. Is it any cause of surprise that cases of these diseases are here contracted, to be carried to distant sections of the country, there to develop themselves, to the surprise and alarm of whole neighborhoods? It is also well to remember that several large livery stables are located in the immediate neighborhood, whose vehicles, it is well known, are frequently employed to carry persons suffering from these diseases, to hospitals or to attend at funerals. These vehicles are, perhaps, immediately afterward driven to various car and steamboat lines to secure passengers, who are thus exposed in the most dangerous manner to these diseases.

It was pointed out over and over again that a good many of the epidemics of small-pox in country towns whose people did business with New York, had their origin in the city. The same thing was even more true for typhus and cholera and similar diseases. "The vigilant health officer of Providence, Rhode Island, stated that small-pox was rarely known in that city except when imported from New York." It is easy to understand then that the up-State legislators were won over to readiness to vote the sanitary reform needed to enable New York City to clean up. Strange as it may seem, the trouble was not in securing the support of the up-State Legislators, but of those representing city districts. Of course it was a question of politics and of graft, but for years every effort to secure better health conditions and above all better health organization, was defeated. Even as I have said, the first year after this inspection was reported a clique in the Legislature still succeeded in defeating the bill.

As Dr. Stephen Smith said, "The City Inspector's Department which alone had the machinery for sanitary inspection and surveillance was a gigantic imposture. Of its forty-four health wardens whose duty it should be to make house to house inspections, searching out the cause of disease and using every known agency for the control and suppression of epidemics, many are liquor dealers, and all are grossly ignorant. Not one has any knowledge of medical subjects, nor dare they freely visit such diseases as small-pox, typhus, or cholera." And yet it was found during the course of the inspection made by the Sanitary Association's inspectors that even the slightest quite unintentional hint of notice by the authorities of the conditions which existed, was often sufficient to bring about immediate and striking reform. Sometimes an inspector made a preliminary visit and a few inquiries before taking up the sanitary survey in a particular dwelling or group of dwellings. The report that any one had been asking questions about conditions, proved enough to arouse in owners something of the sense of their duty, and frequently when the inspector returned a few days later, things had been a good deal cleaned up. Above all, privy leaks had been repaired and whitewash had been used freely. The incidents served to show how much probably could be accomplished without difficulty if there were any adequate inspection.

Almost needless to say, the presentation of this report brought about the needed legislation for this reform, though in spite of the crying need for sanitary regulation thus made manifest that legislation was not secured without considerable opposition on the part of politicians. The report was presented to the Legislature of 1865, and though it was declared after the hearing before the joint committees of the Senate and House of Representatives that the bill would immediately pass both houses without opposition, this did not prove to be the event. The city inspectors secured delay by requesting another hearing in order to investigate the facts presented by the voluntary inspection, and a combination of politicians in the meantime was made and the bill was actually defeated. Health had to become a political war cry, and seventeen candidates for the Legislature who had voted in opposition to the bill in 1865 were defeated before the friends of sanitation could secure the adoption of their health measure.

The new Health Board had its first serious trial when cholera made its appearance in New York within the year after its organi-

zation. A series of cases occurred in the city in many different parts, but no two cases occurred in the same place so effectually was each case treated. Within a month public confidence in the power of the board to control the spread of the disease was firmly established. As Dr. Stephen Smith says, (*op. cit.*), "People who had fled returned to their homes; business in commercial districts which was at first suspended was resumed; and the Health Department became the most popular branch of the city government, a position which it has maintained uninterruptedly for nearly half a century."

If New York City owed nothing else to the medical profession and to medical science than what was thus accomplished for the general health of the municipality, that would be a priceless benefit. Before the passage of that law the annual death rate of the city fluctuated between 28 and 40 per thousand population; since that law went into effect it has steadily fallen until it has reached the low figure of scarcely more than 14 per thousand on the average at the present time. This difference in the death rate means the saving of nearly 100,000 lives per year, perhaps even more than that, of the present population of the city. It means ever so much more in the sickness that is saved, and the waste of time not only for those who themselves are ill but also for those who have to care for them, while the sparing of suffering of body to the sick and of mind to those who are close to them is simply incalculable.

It was important that the Legislature should confer upon the Board of Health a power that had so far never been granted to any department by our laws. A Health Board to be effective must not be subjected to the possible liability of being interrupted in its efforts to abate nuisances which it declares dangerous to life and detrimental to health, by an injunction which would delay its action. Accordingly, the law had to be so drawn that the Metropolitan Board was empowered to create ordinances, to execute them in its own time and manner, and to sit in judgment on its own acts without the possibility of being interrupted by review proceedings or injunctions by any court. We know now from practical experience how important, indeed, practically indispensable, is the granting of such powers and how much good is accomplished by them. It might well have seemed, however, to the legislators, that the granting of such extensive powers would be dangerous, as in-

deed it is, because of the liability to abuse, but there was no other way to secure proper health regulation. The power of the courts to review the proceedings of the Health Board had to be done away with. The experience in England, where a great revolution in health matters had been worked during the preceding twenty years, amply justified the trial of this promising experiment.

In order to establish such an autocratic bureau, however, among a people jealous of their liberty, tact had to be used, and the language of that portion of the bill conveying the most ample powers was purposely made very technical. Mr. Dorman Bridgman Eaton, who had studied English sanitary legislation carefully, was requested to draw up the bill, and it was he who was mainly responsible for the form in which it came to pass. He felt that the meaning of the legal phraseology would have to be passed upon by the Court of Appeals before the law could be successful. On the organization then, of the Metropolitan Board of Health under the bill drawn by him, he accepted the position of counsellor to the board, and argued the case for the constitutionality of the law, which, as he had anticipated, was early brought against the board. He was successful in the lower courts, and fortunately won in the Court of Appeals, though only by a majority of one. At first there was not a little solicitude lest the powers of the Board of Health should be abused or fall into the hands of those who would use them selfishly for political purposes, but now it is recognized that Mr. Eaton's work was one of the most important contributions to community good that has ever been made.¹

¹ New York City owes much more than this to Mr. Eaton. Some of the reforms which he organized and suggested the legislation for, have been almost as far reaching as that of the Health Department. To Mr. Eaton is owed in connection with the Citizens' Association the law creating the Fire Department which did away with the old Volunteer Fire Department. This after doing valuable service in the past had degenerated and become quite as discreditable to the city in certain ways as was its health organization. After this Mr. Eaton drew up the law which brought into existence the Department of Docks and though this department was to occupy an entirely new field in the municipal administration the basic law creating it shows the same mastery of all the details that characterizes the rest of his legislative work. To him too is due the reform of the police judiciary which was of great importance for the radical reform of criminal jurisprudence in New York City. Mr. Eaton's own expression near the end of his life may well stand as his epitaph: "I ask only to be remembered as one who in his sphere of life's duties endeavored to improve the conditions of human life around him."

CHAPTER XV

MEDICINE AFTER THE CIVIL WAR

VERY shortly after the Civil War, began that development of science applied to medicine which makes medical history strikingly different in the two periods and made medical practice a thing quite apart from what it had been. The use of scientific instruments and apparatus of various kinds form the basis of this revolution. The introduction of the thermometer quite literally revolutionized the study and treatment of fever. The use of the double stethoscope, an American invention, modified in various ways to make it of greater service, added distinctly to the knowledge of diseases of the chest, as also of the condition of the unborn fœtus at any given time. After the establishment of the germ theory of disease, the microscope came in to be of the greatest possible diagnostic service, and then the brood chamber for cultures made bacteriological diagnosis a scientific auxiliary of medicine. The electrical differentiation of organic disease and blood pressure apparatus helped to make a very great difference in the knowledge of patients and their ills, from the time when the tongue, the pulse, the hot or cool feeling of the patient, the taste of the urine and the general look of the stools, represented the data available for diagnosis.

While instrumental aids were thus enlarging the scope and scientific accuracy of diagnosis, the gradual acceptance of the germ theory brought great modification of prevailing notions as to the causation and treatment of disease. Trudeau's demonstration of the possibility of diagnosing with absolute certainty pulmonary consumption from a comparatively early stage by the presence of tubercle bacilli did more than anything else to make Americans realize what a great step in advance had been made. The culture diagnosis of diphtheria provided for by the New York Department of Health solved one of the most difficult diagnostic problems that physicians faced toward the end of the nineteenth century. The Widal reaction, accepted promptly in New York, did away

with an even greater diagnostic mystery which the thermometer had come near solving, but just failed in the most puzzling cases. In the twentieth century the Wassermann test and other laboratory aids to diagnosis have contributed to take medicine to a great extent out of the realm of the arts, where it had been for so long, and put it more and more into the domain of science.

The most striking development in medical practice came from the introduction of the thermometer. It seems almost impossible now to understand how physicians of even a generation ago should have been slow to accept this indispensable instrumental aid, but they were. It had been used by a few observant physicians since the beginning of the nineteenth century. As will be seen in the chapter on "Medical Problems of the Early Nineteenth Century—Some Prize Essays," Currie constantly employed it. Yet it was not in general use during the Civil War, and though Billings employed it, Keen and Tyson record how infrequently it was seen in the hands of the army surgeons. New York was a pioneer in the new development. Wunderlich's work on thermometry attracted attention. It was translated by the younger Seguin, who devoted himself to securing the general introduction of the thermometer, and with Professor William Draper arranged for the publication of the first temperature charts ever employed in this country. It was well on toward the eighties before the thermometer was generally used by city physicians; it was nearly the nineties before it was generally employed in country practice. Older physicians made all sorts of objections to its employment, and asked, as the older Paris physicians had done with regard to the stethoscope, whether a physician was expected to carry such a toy as that around with him; and all manner of remonstrances from the possibility of delirious patients injuring themselves with broken thermometers were urged.

After the thermometer, the greatest revolution in the physician's outlook upon disease at this time came from the gradual acceptance of the germ theory of the cause of disease. It is hard to imagine now how slowly this theory, which seems so obvious to us, made its way even among intelligent physicians, and what an immense amount of opposition there was to it and how much it was ridiculed. It was not an unusual thing scarcely more than a generation ago for well known physicians to get up and leave the hall when medical papers were being read which emphasized the germ theory

of disease. They wanted to express their contemptuous scorn for such theories and refused to listen to them. It is rather hard now to understand the reluctance even well educated physicians found in admitting the truth of the germ theory. If it will be recalled that even Virchow was very hard to convince of the germ theory and remained for a long time quite dubious in his expressions with regard to it, the state of mind of older New York physicians can be better appreciated.

When the question of tuberculosis being a germ disease, and, above all, being therefore a contagious disease, came up, the impatience of the older men in medicine reached a climax. They refused to think that this disease which had been so long considered distinctly hereditary and due to some condition in the tissues which led to the formation of tubercles and the consumptive condition, could possibly be due to microscopic agents. As for contagion, they knew much better than that, and felt that any such teaching would only seriously disturb those who had devoted themselves so nobly in many a family to the care of the tuberculous. When Trudeau's studies of the tubercle bacillus and his demonstration of the possibility of making an absolutely assured diagnosis of the disease rather early in its course by the presence of the germ were announced, it brought conviction slowly enough, and many an old physician down to the beginning of the twentieth century refused to believe these newfangled ideas. This development of knowledge with regard to tuberculosis is so important a subject in which New York played the leading rôle that it is reserved for a special chapter.

Curiously enough, by the inevitable tendency for the pendulum of opinion to swing too far, the rising generation of physicians, convinced of the truth of the germ theory, were ready to accept evidence for specific germs even on very slight grounds. During the nineties, papers were published and their conclusions generally accepted that were supposed to show the specific bacterial cause of many diseases that still retain their etiological mystery in spite of all the time that has elapsed since. Nearly a dozen of different germs for rabies or hydrophobia were announced, and most of the ordinary diseases of children were supposed to have yielded up their causal mystery. Even for a while, syphilis was supposed to be due to a bacillus. Lustgarten's discovery - a great advance. The fact that there had never ¹ in-

fections with syphilis reported, nor any dissecting room syphilitic developments, was not appreciated as indicating that the disease could scarcely be bacterial in origin, but must be of animal parasitic character, the parasite dying immediately on the death of the body of its host.

The opposition to the germ theory of disease makes it easier to understand the opposition that made itself felt against diphtheria serum. Some of the older practitioners of medicine took a rather decided stand in the matter and would not be convinced. Statistics and counter statistics were appealed to in support of both contentions. It was pointed out that the success of diphtheria serum as a remedy for the disease was proclaimed at a time when the dose of antitoxin being given was so small as to constitute scarcely more than what a few years later would be considered expectant treatment. Medical journals and medical meetings were frequently taken up with these discussions, which the present generation finds it rather difficult to understand.

The gradual acceptance of the germ theory and the success of diphtheria serum predisposed the minds of physicians to the acceptance of further serums, and more than a dozen of them were hailed at one time or another at the end of the nineteenth and the beginning of the twentieth century as curative for various reasons. Practically, diphtheria serum remained alone in its power to heal among the serums, though some of the others proved to be of very great service for prophylaxis. The curious fact is that diphtheria not protecting against itself, might have seemed unlikely to be cured by an antitoxin. The possibility of diphtheria serum or antitoxin proving effective for some other reason than that usually supposed, has remained in the minds of a good many physicians. The problem will perhaps be settled in the course of developments that are now almost upon us.

A new stimulus to therapeutics was given when Dr. George Elliott, of New York, brought with him from Edinburgh in 1860 a hypodermic syringe. It took a good while for this to become a common instrument in the hands of physicians, and after the experience of this present war during which it has been so constantly useful, it seems almost impossible to imagine that they did not have the hypodermic needle for use during our Civil War. There was a distinct feeling of opposition to its use, and various excuses for this opposition were made. Professor Allbutt has told the story of

the hubbub that was raised over the use of the hypodermic needle in England. There, of course, the division of members of the profession into physicians and surgeons was much more faithfully kept than with us. The question then was whether those who practised pure medicine could consistently with the traditions of purity, perform this operation with the needle. In this country the opposition was largely a matter of simple ultra conservatism, and the fact that, as the hypodermic was used for opium and other narcotic drugs, it was feared it might readily lead to abuses. It was not until well on in the eighties, however, that the hypodermic needle became common at all outside of the large cities.

The greatest change that took place between the two periods of before and after the Civil War was in therapeutics. Calomel, opium, whiskey and the drastic purgatives had been the standbys of the first part of the nineteenth century, as they had been, of course, for the greater part of the preceding century. Purgatives at least had been the main resource of physicians for some twenty centuries before that. It was simply surprising what marvelous results in all sorts of diseases were obtained by calomel. All the self-limited diseases were cured by it. It was a favorite remedy for diphtheria and small-pox and measles and scarlet fever and pneumonia and erysipelas, and ever so many others. At one of the very earliest meetings of the Academy of Medicine that I attended some time in the later nineties, an old physician from the country, who was present at a discussion of pneumonia, told us very calmly that he cured all his pneumonia cases with calomel. He gave divided doses for from three to five days after he first saw the patient, and this "brought on a crisis," after which the patient usually went into a quiet sleep and a gentle sweat and woke up refreshed, asking for something to eat. Nothing ever threw so much light on the past as this little atavistic reversion injected into the midst of discussions of possible serums, coal tar specifics, creosote derivatives and insistence on fresh air.

About the middle of the nineteenth century and for nearly a generation afterwards, alcohol in the form of brandy or whiskey was a favorite remedy for a great many of the severe febrile diseases. In the chapter on epidemics we have quoted from Stephen Smith as to Dr. Alonzo Clark's use of alcohol in the treatment of typhus fever. In puerperal fever and septic conditions large quantities of it were used, even to the extent of a quart of whiskey in the

twenty-four hours. It was considered so valuable an adjunct in the treatment of pneumonia that one distinguished New York physician, well known for his diagnostic ability with regard to pulmonary diseases, is said to have declared that if he were given all the drugs of the pharmacopeia on the one hand without whiskey, or whiskey without the drugs of the pharmacopeia on the other, for the treatment of pneumonia, he would take the latter alternative, confident of thus saving far more of his patients. The text books of medicine of the early part of the second half of the nineteenth century commend brandy or whiskey for many diseases, and the medical lectures of the time were still more full of it. This employment of alcohol is all the more interesting because the House of Delegates of The American Medical Association, at its meeting in New York in June, 1917, passed the following resolutions: "We believe that the use of alcohol as a beverage is detrimental to the human economy, and its use in therapeutics as a tonic or stimulant or as a food has no scientific basis; therefore, be it resolved, that the American Medical Association oppose the use of alcohol as a beverage; and be it further resolved, that the use of alcohol as a therapeutic agent should be discouraged." Meantime a therapeutic cycle had been completed.

In the late eighties came the coal tar products, which had a great deal to do with displacing calomel and whiskey as the panacea for febrile ills. As we look back now, we can see that there were very serious abuses of them. Antipyrin, which came, at first was used to such an extent during the earlier epidemics of influenza in this country as surely to produce rather serious, if not even fatal, results. Acetanilid, which followed it, became a favorite popular remedy for headaches and did probably even more harm than antipyrin. The salicylates, introduced for rheumatism and supposed for so long to be a specific for that affection (though at the Charité in Berlin, where it was originally introduced, von Leyden preferred antipyrin, and Gerhardts phenacetin) came to be used for all the pains and aches that flesh was heir to, and especially for flat foot and the occupation pains. A series of coal tar hypnotics, each introduced with the definite assurance that it had all the advantages and none of the disadvantages of opium, proved each in succession to have certain serious very lasting effects that made them eminently undesirable when used over long periods. They replaced opium and whiskey

with very dubious benefit, though their power to relieve pain made them very alluring remedies.

The whole series of coal tar hypnotics have been quite equally disappointing. The earlier drugs of this kind, of which sulphonal was the type, proved, after persistent use for a prolonged period, to give rise to serious and even fatal blood conditions. Their use generally did much to disturb the physical condition of patients whose mental rather than their bodily state needed treatment. Further members of the coal tar series are being exploited and gradually finding their way into the hands of the general public, and the impression is that they probably do more harm than good. Because they reduced fever and lessened pain, they were considered to be curative, but their activities in these directions are as yet unexplained and they have no direct neutralizing action upon the pathological condition that is at work. The question as to whether reduction of fever, except when it is excessive and therefore likely to do direct harm, may not be in opposition to nature's protective reaction, because high temperature inhibits bacterial growth and increases vital resistance, has long been felt. Facile cures for pain always do harm eventually because they lead almost inevitably to the abuse of the drugs which produce such effects. Morphine and cocaine, so valuable when properly used, have proved the source of much evil, moral as well as physical, because of abuses that have come in their employment.

Then came the period of the serums and the organic therapeutics. Just at the beginning of the twentieth century, practically all physicians were convinced, after the success of diphtheria serum, that it was only a question of a little time and further investigation until we should have serums for all the infectious diseases. Altogether some twenty-five serums have been used, one of which has absolutely made good, though, as has been said, as it was for a disease that does not protect against itself it could scarcely have been expected; two are of service as prophylactics; two are still on trial, and a score have been definitely abandoned. Their use seriously hampered the real progress of medicine for a good while. As the result of the success of feeding thyroids in myxedema, organic therapeutics came in, but proved to be only another one of the bypaths in therapy down which the profession was led, for a time, away from the high road of real advance, because the original investigators, in their enthusiasm for their discovery, real or sup-

posed, were led to give it a significance in the cure of disease far beyond what it deserved.

As time has gone on there have been further disillusionments in therapeutics. The vaccines followed the serums in interest. It looked for a time as though they would accomplish actually for surgical conditions of many kinds what the serums had promised for medical conditions. The discussion at the 1917 meeting of the Americal Medical Association, in New York, registered the feeling of disappointment in this regard, and probably indicated that the vaccines were to prove quite as disappointing as the serums. Some of them are magnificent contributions to prophylaxis, but most of them, when used therapeutically, will probably have to be relegated to that crowded lumber room of remedies that healed for a time and then after further investigation proved to be without any physically curative action.

In medicine, then, the men who have been permanently helpful for medicine and who made real progress, were those who, devoting themselves to the diagnosis of disease, added to knowledge and, above all, diffused ideas that made the recognition of disease a common property of the medical profession. New York was very fortunate in having some of the most distinguished diagnosticians of their time as teachers and consultants—men whose writings brought prestige to American medicine not only throughout this country but also throughout the medical world. Flint, Loomis, Leaming, Janeway, Delafield, with Prudden and Biggs, are the names that will stand out in the history of New York medicine during the second half of the nineteenth century.

From this standpoint, one of the most significant influences in the medicine of the second half of the nineteenth century in New York was Austin Flint. He came of a medical family for four generations, graduated at Harvard in 1832, and began practice in Boston. Shortly after he moved to Buffalo and founded the *Buffalo Medical Journal* and began to attract attention by his writings. He became one of the founders of the Buffalo Medical College, where his ability as a teacher was soon manifest. He was called to the chair of the Theory and Practice of Medicine at Louisville, where he was a colleague of Dr. Samuel Gross, the surgeon. Gross has paid high tribute to his ability as a teacher and as a bedside instructor. As a diagnostician in diseases of the chest, he did not hesitate to say that he should be regarded as th-

American Laënnec. Flint afterwards became Professor of Clinical Medicine in the New Orleans School of Medicine, and finally Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical School.

In New York, Flint came to exercise profound influence on the medicine of the country. He followed the French school of Laënnec and Louis in opposition to the German school with regard to the intimate relation between consumption and tubercles, and he wrote a series of books on diseases of the chest. His well known text book on the "Principles and Practice of Medicine" was valued as highly in England as in this country and went through many editions. *The London Lancet* said of him, "America may well be proud of having produced a man whose indefatigable industry and gifts of genius have done so much to advance medicine, and all English reading students must be grateful for the work he left behind him." He was a most impressive teacher, a very helpful consultant, and a thoroughly conservative physician. His influence was more felt than that of any other single man in the American medicine of the second half of the nineteenth century.

Flint was thoroughly sensible, and always openminded. When the bacterial theory of disease began to develop, he adopted it and proved one of the earnest advocates of it here in America. At the first meeting of the New York State Medical Association, which had been founded as a protest against what at the moment seemed a certain laxity of medical ethics in the State Medical Society, he read a paper on Dyspepsia which is intensely modern in its recognition of the fact that a great many of the symptoms of indigestion are really due to overattention to the feelings after eating. He did not hesitate to say that it seemed to him a fair inference that dyspepsia may result from an attempt to regulate diet by rules which have for their object the prevention of the affection which they actually produced. He added, "I am accustomed then to ask the patient, 'Do you regulate your diet?' The answer is generally in the affirmative, and it is often given promptly and emphatically. Then I say: 'This is a good reason for your having dyspepsia; I never knew a dyspeptic get well who undertook to regulate diet.'"

His summing up of the directions for the dyspeptic anticipate in many ways discoveries of the modern time as, for instance, not to the amount of fluids taken. We have found by

experiment and observation in recent years that in spite of the tradition which declared that ingested fluids by diluting the gastric juice led to digestive disturbances, a considerable quantity of fluids facilitates, rather than hampers, digestion. We have learned, besides, the lesson as regards insomnia being due to insufficient nutrition and especially to too small an evening meal. Dr. Flint brushed aside a great many of the finicky rules of the preceding generation, and summed up his advice as follows:

Do not adopt the rule of eating only at stated periods, twice or thrice daily. Be governed in this respect by appetite; and eat whenever there is a desire for food. Eat in the evening or at bedtime, if food be desired. Insomnia is often attributable to hunger. In the choice of articles of diet, be distrustful of past personal experience, and consider it to be a trustworthy rule that those articles will be most likely to be digested without inconvenience which are most acceptable to the palate. As far as practicable, let the articles of diet be made acceptable by good cooking. As a rule, the better articles of food are cooked, the greater the comfort during digestion. Never leave the table with an unsatisfied appetite. Be in no haste to suppose that you are separated from the rest of mankind by dietetic idiosyncrasies, and be distrustful of the dogma that another man's meat is a poison to you. Do not undertake to estimate the amount of food which you take. In this respect, different persons differ very widely, and there is no fixed standard of quantity which is not to be exceeded. Take animal and vegetable articles of diet in relative proportions as indicated by instinct. In the quantity of drink, follow nature's indication, namely; thirst. Experience shows abundantly that, with a view to comfortable digestion, there need be no restriction in the ingestion of liquids.

After Flint, New York's greatest teacher of medicine in New York after the Civil War was Alfred L. Loomis. He, too, gave special attention to diseases of the chest. He had come to New York as a young man of twenty-three, with money exhausted from the expenses of his education, not very strong in health, and with a tendency to consumption, which had claimed many members of his family. After a severe struggle he succeeded in making his way, helped in the reorganization of the University of the City of New York, for which he secured the Loomis Laboratory, and made himself a power in medical education. He was Dr. Trudeau's greatest friend and patron in the magnificent work for consumptives that was organized in the Adirondacks, and the Loomis Sanitarium at Liberty, organized in his honor, is a worthy tribute

to his influence. His text book on "The Diseases of the Respiratory Organs, Heart and Kidneys" attracted wide attention and exerted a deep influence in American medicine.

One of the leaders in the modern scientific medical movement after the Civil War was Dr. S. Oakley Vander Poel (1824-1886), the son of a physician at Kinderhook. He graduated at Jefferson Medical College, Philadelphia, spent two years in Paris, and practised in Albany with great success. During the Civil War he was Surgeon-General of the State, and fulfilled the large responsibilities of the position admirably. After the war he became Professor of General Pathology and Clinical Medicine at Albany Medical College. He was elected president of The State Medical Society in 1870. In 1872 Governor Hoffman appointed him Health Officer for the Port of New York, and Dr. Vander Poel succeeded in bringing about important reforms in quarantine. He became very much interested in sanitary science, and in 1883 was chosen Professor of Public Hygiene in New York University. His quarantine experience in New York, together with his special studies, made him one of the earliest scientific sanitarians of the country and a leader in the organized movement for the diffusion of knowledge with regard to public health which has meant so much for our generations.

A very important factor in the scientific medicine of the second half of the nineteenth century was Dr. James Rosebrugh Leaming (1820-1892), whose diagnostic abilities in diseases of the chest gave him a preëminence in New York medicine acknowledged by all. He graduated from New York University in 1849, and lectured for a time in the New York clinic as a younger man, but held no important teaching position toward the end of his life, yet was looked upon as a favorite consultant. He wrote a series of articles on diseases of the heart and lungs, all of them stamped with a personal note and filled with practical knowledge derived from his own observations.

One of New York's memorable physicians whose fame is likely to remain with us enduringly, at least among all those interested in medical literature, is Samuel Smith Purple (1822-1900). He was born in Lebanon, Madison county, New York, and his father was a local tanner and shoemaker, just about able to support his family. As a boy, young Purple went to a country school, but at the age of seventeen his father died and he had to take over the

business and support the family. This was no easy matter; his father had left debts, and the boy had no liking for business. He succeeded in securing a free course of medical lectures at Geneva Medical College, and his uncle, a physician, paid for another at the University of New York. He was only twenty-two when he graduated, but he had attracted the attention and had secured the friendship of Dr. Valentine Mott. Seeing the opportunities of New York City, he planned to return there, but he had to work his way on a canal boat. It was three years before he was able to support himself, and he became editor of the *New York Medical Journal*. This gave him an interest in old medical periodical literature, and Purple began to collect old medical books and particularly old medical pamphlets and journals. He saved for us many literary medical items that would otherwise have perished. Above all, his enthusiasm roused others to care for these old medical works.

This does not seem a very large occupation for a career, and yet Dr. Purple succeeded in making himself deservedly famous by following it. Honors came to him in the midst of his work. His own articles on medical subjects showed that he was a man who observed carefully, and who was thoroughly conservative, yet progressive, in his medical judgments. He was the president of the New York Academy of Medicine for two terms, and he lived to be seventy-eight years of age, honored and respected, constantly occupied with the thought of making the medical library of the Academy more complete, and following up every clew in person or by correspondence that could possibly complete his collection of journals. He never married, but he made a home for his relatives—mother, brother, and a brother's widow and children, and found a life's satisfaction in his work for the profession.

One of the most important contributors to practical medicine in the country, and a man whose work made his name well known to physicians all over the world, was Dr. Joseph O'Dwyer (1841-1898). His invention of intubation and the working out of the problems connected with it stamp him as one of the practical geniuses of modern medicine. He was simply and solely a physician, deeply interested in his patients, and intent on doing anything and everything in order to relieve them of suffering or help them back to health. As a young man he twice contracted cholera while resident at the City Hospital on Blackwell's Is

ing himself unstintedly to the poor patients. Born in Cleveland and brought up in Canada, not far from London, Ontario, he settled in New York, and when about thirty was appointed as visiting physician to the Foundling Hospital.

Diphtheria was the dread disease of the children's hospitals at this time, and O'Dwyer saw much of it. From one-third to one-half of the patients died in some of the epidemics, a great many of them the lingering painful death by asphyxiation, while physicians and nurses stood by unable to do anything, and parents had to see the prolonged death agony in broken hearted patience. Tracheotomy often proved ineffective, and O'Dwyer proceeded to work out the problem of inserting a tube in the larynx and so maintaining breathing space there in spite of the progress of the disease. A number of attempts of this kind had been made before, but all had failed. It had come to be looked upon as quite infeasible to have the larynx tolerate a foreign body of this kind for any length of time. In spite of the discouragement of all around him, O'Dwyer continued his studies and experiments, confident that great good could thus be accomplished.

He studied the larynx of the child on the cadaver, changed the instruments from one form to another, beginning with a small bivalve speculum and trying wire arrangements of various kinds, finally settling on a tube. His speculum had made the little patients more comfortable for a time, the tubes affording immediate relief and often actually saved lives. O'Dwyer had many problems with regard to the size and shape of his tubes and the instruments for their insertion and extraction to work out, and he spent many years of patient work in doing it. When he finally succeeded in perfecting the instrumentation of intubation, he offered his method to the profession. Already murmurs of opposition against his work had been heard among some of his colleagues of the Foundling Asylum, where it was said that his experiments were only causing added pain to the patients, prolonging their sufferings and doing little or no real good. At a special meeting of the Academy of Medicine, before which O'Dwyer set forth his ideas, practically every important specialist in children's diseases in the city agreed that his invention was of little service. O'Dwyer was so sadly disappointed that, sensitive as he was, he shut himself up and refused to see any one for some days.

first, nor will he be the last, to solve successfully

an important problem for physicians, and have his solution carped at, if not rejected. Like others, too, O'Dwyer could see many a hasty generalization readily accepted and the supposed discoverer in honor in his own generation, though he had really accomplished nothing except to set medicine back by guiding it into a blind alley. In the course of time O'Dwyer saw his invention gradually assuming its proper place as a magnificent adjuvant to medical practice. Intubation proved to have a distinct place also in the treatment of strictures of the larynx of other kinds than those due to diphtheria, and now that the success of the antitoxin treatment has done away with the necessity for the use of the intubation so frequently in diphtheria as used to be the case, this other use of O'Dwyer's tubes has become almost the most important value of O'Dwyer's invention.

While he found others so unsympathetic toward his own work, O'Dwyer himself proved eminently open of mind, and when anti-toxin was introduced he was one of those who turned most willingly to work out the problems connected with its administration. Though its success would mean a lessening of the significance of his own invention, O'Dwyer applied himself to the difficult problems of determining the dosage and learning the real significance of the complications which followed.

Probably O'Dwyer's name will be better remembered than that of any other physician of New York of the latter half of the nineteenth century. His untimely death found him in the midst of serious studies looking to a mechanical treatment of pneumonia which he hoped to benefit by producing a sort of mechanical emphysema. He did not write much, but what he did was to the point and remains valuable even in our time. He was quiet, retiring man, with a great tenderness of disposition and a deep love for children. It was this that made him devote himself so wholeheartedly, in spite of discouragements of all kinds, physical and professional, to the solution of the problem of saving children from suffocation. His success brought him not pride, but the satisfaction of having done good work in saving children's suffering.

One of New York's most distinguished physicians at the end of the nineteenth and the beginning of the twentieth century was Dr. Janeway who, though neither a popular teacher nor a prolific writer, deeply influenced his generation by his diagnostic powers and his interest in that combination of pathology with diagnosis

which makes for genuine scientific medicine. He came to be looked up to as wonderfully reliable in his power to see through the body, as it were, and recognize its ailment even under the most difficult circumstances.

The New York physician who best represents the connecting link between the older medicine and the new was Francis Delafield who, at the completion of nearly three-quarters of a century of active life, died in 1915. His first medical article had been published in 1868, nearly fifty years before, and he had published some eighty articles, besides contributions to text books and systems of medicine. He was, in Dr. Janeway's phrase, New York's "first laboratory clinician," who combined the old clinical diagnosis of hand and eye and ear with the laboratory and instrumental methods that came in at the end of the nineteenth and the beginning of the twentieth century. He was deeply interested in pathology, and made that science the handmaid of clinical diagnosis as a sure basis of certainty in the study of disease. Delafield and Prudden's "Handbook of Pathological Anatomy and Histology," issued originally some thirty years ago, is still the American textbook on that subject, and in the tenth edition, in 1914, doubled in size, was a very thorough compendium of scientific medical knowledge of disease causation and conditions. His "Studies in Pathological Anatomy," with illustrations, was a distinct contribution to American medical science.

The sanitary revolution cleared the ground for the development of medicine in New York, and the latter part of the nineteenth century saw the city become the centre of attraction for medical students from all over the country. The organization of the post-graduate schools had a great deal to do with this, for not only medical undergraduates but physicians, who had been in practice for years, were thus enabled to take advantage of New York's abundant clinical opportunities under such circumstances as greatly raised the standard of practice wherever these post-graduates afterwards went. The added call for teachers in medicine in all its branches that was thus made brought out the best efforts of a large number of men. No one ever comes to understand his medical cases so well as he who has to demonstrate them to others. The teacher always gets more out of his work even than the pupil does. Whenever that ceases to be true, it is probable that the

teaching is so defective or so lacking in enthusiasm as to be of comparatively little worth. New York's post-graduate schools, then, reacted distinctly to raise the standard of medical practice in New York City and to lead to real developments in medical science.



CHAPTER XVI

SURGERY AFTER LISTER

THOSE at all familiar with the history of surgery know what an immense revolution was worked in surgical practice by Lister's discovery of antiseptics, and the development of the details of surgical aseptic technique which followed it. Surgical death rates in hospitals had been almost incredibly high, often more than fifty per cent., sepsis taking away sometimes three out of every four patients. The statistics of operations during the Civil War are a striking testimony to this state of affairs. No wonder that surgeons cared to operate only when they had to, or their patient would surely die, or else limited their operative intervention to external procedures where there was good hope that septic processes could be controlled to a considerable extent. The doctrine of laudable pus, which included the idea that every operation wound almost inevitably suppurate but that some forms of suppuration were so much more favorable as to indicate from the very beginning that the patient would probably recover from them, was unfortunately the accepted teaching everywhere.

What had made the need for antiseptics poignantly felt was the introduction of anæsthesia which did so much to broaden the field of surgery, for it made surgical operations very different from the awful scenes that they had been before, "a hell to patients and a purgatory to operators." No wonder that under the circumstances, men intelligent enough to plan successful operations should have been humane enough to dread them. John Hunter declared for this reason that an operation was a confession of failure and a last resort, and distinguished contemporaries agreed with him. Dr. Samuel Warren's "Diary of a Medical Student" emphasizes the horrors of the old time operating room. It is easy to understand how operations were dreaded and often refused before and then how they multiplied immediately after anæsthesia began to be used at all generally. Dr. Keen in his "Addresses and Other Papers"

is a striking commentary on the immediate results of

anæsthesia to learn that in the five years before the introduction of ether (1846) only one hundred and eighty-four persons were willing to submit themselves to such a dreadful ordeal in the Massachusetts General Hospital—an average of thirty-seven operations per annum, or three per month. In the five years immediately succeeding its introduction, although the old horror could not at once be overcome, four hundred and eighty-seven operations, or almost one hundred annually, were performed in the same hospital. During 1898, in the same hospital, over 3,700 operations were performed.” The number of operations has gone on rising during the twentieth century and between the comfort of anæsthesia and the safety of antisepsis will continue to do so.

Definite achievement in aseptic surgery had come in New York in a practical way even before the acceptance of Lister’s principles. Dr. Thomas Addis Emmet particularly accomplished excellent plastic work in the vagina simply as the result of thorough cleanliness, and it is rather surprising to review his results in the light of the most recent developments; for few are much better, even in our time. The tenotomies of New York orthopedic surgeons were so uniformly successful in the preantiseptic days as to make it clear that an unconscious anticipation of such surgical cleanliness as was afterwards to be called asepsis enabled them to secure their results.

With the definite development of the antiseptic era, however, the opening of joints and of brain surgery became possible without submitting the patient to the almost inevitable risks of sepsis which had characterized preceding surgical attempts in that direction. Above all the opening of the abdomen, that *noli me tangere* of earlier surgeons, gradually became a recognized surgical procedure. Bull in New York was the first one to venture to do it for gunshot wounds, and his example proved a stimulus to American surgeons that soon made laparotomies very common. Indeed, the operation hitherto so dangerous became so comparatively innocuous toward the end of the nineteenth century that a great many laparotomies were done for which there was probably no good surgical reason. This was particularly true as regards mutilating operations upon feminine organs and the removal of the ovaries came to be looked upon as an operation that almost any surgeon might perform.

With the acceptance of the germ theory of disease and vaccine and serum treatment, tetanus and hydrophobia, which had been

looked upon as surgical diseases, lost most of their terrors. It was in New York hospitals that the practice of giving a prophylactic injection of antitetanic serum to every patient whose wound had been subjected to contamination with street dirt, and therefore was liable to be infected with the tetanus bacillus, brought about a great reduction in the incidence and mortality of the disease. The introduction of the Pasteur treatment accomplished even more than this for hydrophobia, while the regulation of wandering dogs directly prevented the disease.

To the student of medicine in the modern times it might seem that Listerism, which has now become to us such an obvious truth, would surely make its way into practice without difficulty. As a matter of fact, it was accepted only very slowly, its principles were doubted, its practice scouted, and older surgeons refused for many years to take up what seemed to them the almost ritual procedures necessary to secure proper antisepsis. When it is recalled that the germ theory of disease was, as I have told the story in the chapter on "Medicine After the Civil War," making its way very slowly, indeed, with almost irritating dilatoriness for those who were convinced of its truth, it will not be surprising that Listerism should lag in adoption by surgeons. Old physicians got up and left crowded medical meetings when younger men read papers on the germ theory of disease, and older surgeons treated Listerism even more cavalierly.

Gradually the younger surgical generation, professors' assistants and the assistant surgeons of hospitals, succeeded in bringing chiefs to understand the necessity for the application of Listerian principles, but it took a good deal of training to change old surgical habits and keep well-known surgeons from making flagrant errors in antisepsis. Only those who actually went through the experience would now credit some of the things which were actually seen in operating rooms where antisepsis was supposed to be practised as scrupulously as possible. Even in the days when every one who entered an operating room had to give his professional word of honor that he had not seen a case of scarlet fever, diphtheria, or erysipelas, within twenty-four hours, some of the details of operative procedure were amusingly opposed to anything like aseptic or true antiseptic precautions.

For instance, in laparotomies for ovariectomy, after the pedicle had been developed and everything was ready for the ligature, it

was not unusual for the assistant in charge of the ligatures to be asked to hand it to his chief and he would at times have had it dangling from the buttonhole of the waistcoat that he wore in the operating room and in ordinary practice, and plucking it therefrom would pass it over. It had been hung there for convenience sake at the beginning of the operation and no one found anything amazing in the procedure. An old surgeon trying to practice antisepsis wearing his ordinary coat with the sleeves turned up and an apron that came slightly above his waist, but wearing otherwise his ordinary street clothes, would sometimes need to use both his hands for some intra-abdominal manipulation and would therefore, as in the good old days, put his knife between his teeth so as to leave both hands free, and a little later take it from there in order to go on with the operation.

In the last quarter of the nineteenth century one of New York's leading surgical teachers was Dr. William Tillinghast Bull (1849-1909). He was made Professor of the Practice of Surgery in 1890 at the College of Physicians and Surgeons, from which he had received his M.D. in 1872. He was a bold, successful surgeon, who when under thirty ventured at the Chambers Street Hospital in New York to do laparotomy for a gunshot wound of the intestines. He found the perforation, repaired it, and the patient recovered. The report of the operation attracted attention throughout the world, for laparotomies were rather unusual, and while the abdomen had been rather frequently opened before this for the surgical treatment of the various affections of the ovary, this was ground-breaking work in the radical treatment of gunshot wound of the intestines. Dr. Bull himself died of cancer, for which he had operated so often in life, and at the end he gave an example of courage and endurance which impressed those near him quite as much as his skill had influenced his colleagues.

The New York surgeon on whom fell the mantle of Dr. Frank Hamilton in the study and development of the treatment of fractures and dislocations, was Dr. Frederic S. Dennis. Dr. Hamilton's work had been done in the preantiseptic days, and Dr. Dennis applied the great principles of antisepsis and subsequently of asepsis to compound fractures, and his teaching helped in the saving of a great many lives and undoubtedly also of a great many limbs. The colleague who carried on this work, adding his noteworthy contribution to the developing knowledge of fractures and dislo-

tions, was Dr. Stimson. This trio—Hamilton, Dennis and Stimson—have probably done more than any other group of men anywhere in America—one is tempted to say, anywhere in the world—for the development of the knowledge, practical and scientific, of this whole difficult and extremely important subject of fractures and dislocations.

Undoubtedly the most significant contribution made to surgery in America is the development of the surgical treatment of appendicitis. This whole important subject owes its progressive steps to present day satisfactory practice in the matter, though this region had been one of the opprobria of surgery, to the surgical skill and enterprise of New Yorkers. Certainly almost all the significant advances have been made by men working in New York City. In 1856, Dr. George Lewis, at the suggestion of Dr. Stephen Smith, wrote "A Statistical Contribution with Regard to our Knowledge of Abscess and the Diseases Consequent upon Lodgement of Foreign Bodies in the Vermiform Appendix, with a Table of Forty Cases." This paper not only called but fixed attention, especially among New York colleagues, in a very practical way to affections of the right iliac fossa. When Willard Parker took up the opening of abscesses in this region and showed how much good might be done by this simple means, he solved a problem that had been on the minds of a good many surgeons about that time. That this statement is no exaggeration of the significance of this almost obvious surgical procedure which, however, so few had thought of before and no one had pursued consistently, will be best appreciated from an expression of Dr. Howard Kelley, who said, "from the date of Parker's teaching operative treatment of the appendix began an evolution which ended in the revolution of surgery." After this, each ten years has seen very definite progress made along this beneficent path. In 1875 Dr. John W. S. Gouley tabulated twenty-five cases of abscess in this region that had been opened. This paper left no doubt that a great many patients who under more conservative treatment often died, were now being saved.

In May, 1886, Dr. R. J. Hall, Dr. Sands' assistant at Roosevelt Hospital, removed the appendix for the first time. Further work at Roosevelt by Dr. Sands and his colleagues served to make the " " this neglected organ in the causation of the pathological " " the right iliac fossa ever so much clearer than be-

fore. Two years later, Fitz in Boston took up the more purely scientific side of appendicitis, and his epochmaking memoir on the pathology of surgical conditions in this region made it perfectly clear that what surgery had already more than hinted at as to the rôle of the appendix, had a firm scientific foundation. The following year McBurney here in New York placed the surgery of the appendix on a definite level as a special chapter of surgical practice. "McBurney's point" did so much for the differential diagnosis of appendiceal conditions as to make the failure of recognition of many cases that had hitherto been missed almost criminal. As Dr. Stephen Smith rightly declared, "only minor changes have taken place since in our knowledge of appendicitis." At most, certain less significant details have been added and their meaning in the whole problem has fluctuated from time to time though the contributions of New York surgeons have made definite landmarks in the world surgery of this region.

Just at the beginning of the twentieth century, Dr. George Edebohls (1853-1908) attracted attention by his brilliant operative work on the kidney, and his suggestion as to renal decapsulation for chronic Bright's disease and for puerperal eclampsia. He was an original thinker, a skilful operator, a writer who knew how to express himself very clearly, and a teacher of notable impressiveness. He died of Hodgkin's disease, just as his most brilliant opportunity in surgery was opening up for him.

As antisepsis came in and asepsis developed, a great change came over the practice of surgery that is often not quite realized. The specialties dropped entirely away from surgery, and the general surgeon had little to do with eye, ear, throat, nose, or the genito-urinary system. Even the specialty of the treatment of fractures and dislocations became separated to a considerable extent. The term surgery came to mean more and more abdominal surgery, and nearly three out of four of the operations performed involved opening of the abdominal cavity. For this, asepsis was eminently appropriate, indeed, indispensable, and so the practice of antisepsis went out to a great extent. Surgeons of the rising generation knew little of the great problems of caring for infected wounds, which had been the crux of the surgery of the preceding generation.

Under antisepsis, infected wounds had been opened widely and antiseptics used freely in them in the hope of killing the infectious

agents. Unfortunately the earlier antiseptics were extremely toxic and often killed the cells of the tissues to a greater extent than the bacteria present, and above all so lessened the vitality of cells as to greatly reduce their resistive vitality. Some of the surgeons of the early antiseptic period, however, elaborated methods of caring for infected wounds which proved very valuable, in saving morbidity and mortality. Large free openings were made, drainage from the most dependent part of the wound insisted on, drainage tubes were freely used, and the wound surfaces were flushed out thoroughly with antiseptic solutions at regular intervals. Some good effects in the matter of saving limbs, and even some good functional results, were secured in this way, though gradually fewer and fewer of the badly infected wounds were seen.

With the coming of the Great War, the generation of surgeons unaccustomed to the large infected wounds which now occur were deeply discouraged at first over the inroads made in tissues by infections. It was only when the old principles of antiseptic practice, but now more thoroughly applied and with scientific bacteriologic control, were reinvented, that any hope for progress in the treatment of these large infected wounds was made. Surgery had completed a cycle in about a generation and come back to its starting point only now with the larger knowledge and confidence begotten of progress in bacteriology, but with the most excellent results.

Interestingly enough, the opposition against antiseptics was not only passive but to some extent at least active. The men who advocated the complete antiseptic method and who claimed much better results than could be obtained in any other way, were said to be advertisers wanting to get their names before the public. They were looked upon as a little better in some regards than quacks and charlatans, or at least with elements of these undesirable individuals in them. Slurring remarks were made, and they were told that this was just the fad of the moment, to be heard of for a short time in medicine and then to be dropped, and that they were trying to take advantage of it. Some of the leaders in surgery, too, did not hesitate to say such things. The disciple is no better than the master, and after all, when Lister came down by invitation from Scotland to London to take a chair in surgery, he was refused admittance to one of the most important London surgical societies, and the opposition to him was voiced by one of

the oldest and most distinguished surgeons of the day who said, when asked to vote for Lister, "What! vote for that charlatan Lister! Never!" It is not surprising then that New York advocates of antiseptics should come in for similar treatment.

The three men whose names are most intimately associated with the introduction of antiseptics into New York, and, through the city, into the country, are doubtless Dr. Sands, Dr. Robert F. Weir and Dr. Arpad Gerster. Dr. Sands was a thoroughly progressive and enterprising surgeon who went to Europe very frequently, indeed, nearly every year of his earlier active surgical career, in order to get in touch with the best that was being done abroad. An incident of his experiences in Germany is one of the lessons of medical history. The German surgeons were intent on using chloroform as an anæsthetic, and were rather discouraged by the fact that it had a definite mortality, so that there was a death or two at least every year, and then the after effects were often unpleasant. Dr. Sands, visiting the great hospital at Hamburg, suggested that they should use ether, and finally persuaded them to permit him to etherize a patient for them as they were unfamiliar with the process and somewhat timorous about it. He made the usual towel cone and proceeded to etherize the patient, and when cyanosis began and his attention was called to it, said there was no need for alarm. When the cone was removed, however, the patient proved to be dead, and though every effort was used he could not be revived. The incident probably set back the use of ether in Germany for years.¹

¹ It should not be forgotten that Sir James Y Simpson's first patient on whom chloroform was to be used had a more fortunate fate, at least so far as the anæsthetic was concerned, than Dr. Sands' patient. When the hour for the anæsthesia to begin had come the chloroform was not available and the patient was sent back to the ward where he died, very shortly after. Fright was very probably a large element in the case and he would almost surely have died of fright under chloroform just as Dr. Sands' patient had been frightened practically to death by the fact that this stranger was to put him to sleep for his operation with a new drug with which the German surgeons were so unfamiliar that they preferred to entrust its administration to this visitor from America. The death of the first patient under chloroform, had it occurred, would surely have set back the introduction of chloroform anæsthesia for a very long while in a country so conservative as England.

CHAPTER XVII

EVOLUTION OF SANITATION

AFTER the sanitary revolution of the late sixties of the nineteenth century, New York City was in a position to lay the foundation of sanitary control, though some time was needed to develop such definitely ordered municipal sanitation as would really prevent disease and bring about improvement in the health of the citizens. This evolution of sanitation began almost at once with the organization of the Metropolitan Board of Health in 1867. Since 1870, New York City has been a leader in a great many sanitary developments, and a pioneer in the municipal health evolution that has brought medical visitors from all over the world. The great need at first was proper quarantine so as to prevent the spread of infectious and contagious diseases from without and within, and then came the solution of the problems connected with the disease prevention. The vaccination of the poor was taken up, and the visitations of small-pox lessened in frequency and severity. Other disease problems were faced in their turn. The summer diseases of children with their high mortality, diphtheria, typhoid and paratyphoid fever, were each made subjects of special study and practical investigation that have often brought the diseases under control and always greatly reduced their death rate.

The high mortality of the respiratory diseases, tuberculosis and pneumonia, was recognized and definite efforts made to overcome them. The old-fashioned feeling of the inevitability of consumption was not allowed to influence the action of the Department of Health, and magnificent preventive and curative developments have been made which attracted the attention of municipal health authorities all over the world. Under the far-seeing and wise direction of Dr. Hermann Biggs, to whom New York owes so much, tuberculosis was made notifiable, the contagious nature of the disease was made a matter of public knowledge and the proper precautions to take to prevent the spread of the disease made gener-

ally known, and thousands of cases were prevented from being foci of infection. Much yet remains to be done before tuberculosis will be brought definitely under sanitary control, as so many of the infectious diseases have been, but at least a beginning has been made which gives good ground for hope that the spread of the disease will be definitely checked as soon as professional and public interest in the affection lead to its recognition in early stages. Investigations of pneumonia have been made that have been less encouraging in the result, but at least the problem has been definitely faced.

After this came the recognition of the fact that prevention rather than cure must be the work of health authorities, and that not only the direct prevention of particular diseases was of value, but that the conditions which predisposed to them were even more important as the proper subjects of action on the part of sanitary authorities. The care of the milk supply of New York is one of the most important of these developments, and the medical examination of school children another. The old idea that the so-called "children's diseases" are almost negligible and more or less inevitable, has been abandoned, and a definite step forward made in preventing the spread of disease through schools. The natural next step was to secure for adults in their occupations some of the same advantages that are afforded to children in the schools. Each one of these evolutions in municipal sanitation has brought about not only a reduction in mortality but also in morbidity, until now it has come to be generally recognized that in the motto of the Department of Health, "Public health is purchasable; within natural limitations a community can determine its own death rate," we have the summary of modern medical advance for the public.

It would be entirely wrong to convey the impression, however, that there were not in the first half century of the existence of a Board of Health in New York, that is, from 1805 to 1865, some men in charge who recognized clearly some of the problems of municipal sanitation and tried to work for their solution. In the very first report of the City Inspector of Health, in 1806, John Pintard showed the necessity for far-sighted consideration of New York's health problems when he estimated the increase in population of the city for a century, coming not far from the actual figures, if the metropolitan area, a twenty mile radius from City Hall.

be taken. It should be noted, however, that Pintard's calculations were made almost entirely on the basis of the normal natural increase of the population, and without any anticipation of the immense immigration that occurred. Had New York had to depend on such normal natural increase for its inhabitants, it would have fallen far below the estimate of its first health authority. Pintard suggests, in startlingly modern terms, that "from the data here furnished the politician, financier and, above all, the speculator in town lots (a subject, to our shame be it spoken, which absorbs every generous passion) may draw various and interesting references."

As early as 1806 a committee of the Board of Health made a series of recommendations, most of which were to be eventually carried out to the great advantage of the health of the city, though, unfortunately, the fulfilment of some of them was to be delayed for a long time to the serious detriment of city health. In the order of their importance their recommendations, which were of the most progressive character, were "an ample supply of pure drinking water" [Croton water came in 1842, but until 1870 New York still had pumps by which water was drawn directly from the soil of the Island for drinking purposes in many parts of town]; the laying of sewers; the drainage of low marsh land; the construction of a masonry wall along the water front; the prohibition of the interment of bodies within the city limits; the stoppage of the dwelling in damp cellars; the regulation of the habitation of certain houses where malignant fevers have recurred over and over again; the provision of increased accommodations at Bellevue Hospital, and the erection of a private hospital for people of means." Besides, the committee recommended the planting of trees and the encouragement of truck gardening so as to supply healthy fresh vegetables.

The water supply was the most important of these recommendations. New York City had recognized its obligation to supply water for its inhabitants by paying for the sinking of and the caring for a series of wells. Just before the Revolution Christopher Colles, an Irishman of inventive genius who had come to America in 1765, proposed to erect a reservoir near the Collect, or fresh water pond, where he had reason to believe that he could obtain an adequate supply of water. After much deliberation the city approved of the project and issued "shinplaster notes to

finance it." With the Revolution the work was interrupted and never taken up again. Colles fled from the city rather than submit to the British rule, and his water works were totally ruined. The Manhattan Company's water works was organized just at the beginning of the nineteenth century, and the company had twenty-five miles of mains and supplied some two thousand houses with a maximum of about 700,000 gallons. Its wooden water pipes are still dug up in our city streets. Under the mayoralty of De Witt Clinton an attempt was made to have a municipal water system by agreement with the Manhattan Company, but nothing was done and it was not till after the severe epidemics of the first quarter of the nineteenth century had called serious attention to the need of pure water that the matter was taken up seriously.

In the early thirties, after careful investigation of a number of possible sources, De Witt Clinton arrived at the conclusion that an adequate supply could only be obtained from the Croton region. The work of construction was begun early in 1837, and five years later New York had an abundant supply of water brought to it which, it was hoped, would be ample for its growth for years, but which had to be amplified in various ways practically every ten years since, until finally the great Ashokan Dam in the Catskill region was built and the immense water supply which became available in 1917 was successfully brought to us. New York's water has, except for certain incidents when dwellings were allowed to encroach too much on the watershed, saved the city from the typhoid and dysenteric epidemics which have been so serious a factor in mortality lists of other cities.

The committee of the Board of Health of 1806 had outlined a program which, if followed, would have meant a great reduction in the death rate and the prevention of disease for New York City. There were, however, many more serious immediate problems facing the health authorities for years. Pintard, in his first report addressed to De Witt Clinton, the president of the Board of Health, has to inform him that there were 600 deaths from yellow fever in the city that year, which in a population of 75,000 must have made it quite impossible almost to think of anything else than this affection. All during the next generation in New York the reports of the Board of Health are mainly interesting because of the epidemics. Yellow fever came back over and over again, small-pox recurred regularly whenever the number of those protected

by previous attacks grew less; in 1832 there was a severe epidemic of cholera, and this disease continued to attract attention for years until, in the fifties, typhus came to replace it in interest; and in the meantime typhoid fever, bilious fever as it was so often called, carried off numbers.

The first constructive pioneer work of New York City's Board of Health came in 1838, when a regulation was made "forbidding any ferry or bridge masters or captains of vessels to take any dead body from the city without receiving and sending to this office the certificate of the physician or coroner as now required of the sextons in the city." This system of "transit permits," as they are called, is now in force all over the United States.

The first formal declaration of the duty of the Board of Health to prevent disease as well as remedy the conditions which inevitably caused it, is to be found in a report issued by John H. Griscom, City Inspector, in 1842. He insisted that "the mere enumeration of the number of persons dying and the cause of their deaths, though interesting and valuable in a statistical point of view, does not comprise all that the spirit of the law creating the city inspector's department would seem to require or expect from its head. He emphasizes the need of development of *preventive* as well as *remedial* measures. This is just about a generation (that is, thirty-five years) after the recommendations of the first health committee of 1806, and it is interesting to compare Dr. Griscom's program of preventive medicine with the first policy outlined. There is some development, but most of the old sanitary abuses are still in existence. Dr. Griscom suggested the abolition of overcrowded dwellings and of dark damp cellars for habitation, and the prohibition of the use as school rooms of underground basement rooms in dwellings and churches. He recommended the abolition of pigstys and the removal of slaughterhouses from the built-up part of the city, and the drainage of marsh lands to eradicate malaria.

At last, in 1842, the first recommendation of New York City's first formal committee of the Board of Health that the city should have "an ample supply of pure drinking water," was put into effect. Water from the Croton Aqueduct in an abundance that it was hoped would satisfy the city's needs for several generations, was secured. The effect of this on the city's health was noted at once. The intestinal diseases were greatly lessened in number.

Typhoid fever became a vanishing quantity, though the fact that pump water was still in use in the city accounted for many cases of it. The dysenteric diseases were greatly reduced and the mortality among children lessened. The abundant water supply thus assured probably accounts for the one constructive element in the program of the health inspector. This was the establishment of public baths. Dr. Griscom was progressive, however, and was the first to demand that all certificates of death give the occupation of the deceased so that the influence of industry on health might be estimated.

The first birth registration act was not passed until 1845, and after this vital statistics became an important part of the health report. Further improvements in the vital statistics were made during the next ten years, and in 1853 two distinct bureaus, the Bureau of Sanitary Inspection and the Bureau of Registry and Statistics, were created. In 1853 an improved birth, marriage and death registration act was passed under the influence of City Inspector Downing. The information with regard to city health was gradually being brought into the health reports in such a way as to make it clear that the health of the city of New York absolutely demanded a better organization of its sanitation to save the lives and lessen the suffering from disease of its citizens.

With the organization of the Metropolitan Board of Health in 1866, Dr. Dalton, then Sanitary Superintendent of the Health Department, organized an ambulance service for Bellevue Hospital, taking advantage for that purpose of the experience he had secured while organizing the ambulance service of the Army of the Potomac during the Civil War. The first ambulance station was established at 129 Worth street, where it remained until the present station was provided at the foot of East 16th street. Cholera broke out in the city in May, 1866, and the Battery barracks were secured from the Secretary of War for the reception of cholera patients, as well as the barracks at the Five Points. Dr. Stephen Smith was put in charge of these, as well as of measures to control the epidemic, organizing a corps of physicians for house to house visitation, and other means to arrest the disease. There was a very general feeling that his prompt, thorough measures, in accordance with the knowledge of the time, saved a severe epidemic.

It was not long after the establishment of the Metropolitan Board of Health before a very definite evolution of the board's

activities began to be manifest. Even during the first five years of its existence we find it engaged in installing public drinking fountains in various parts of the city; erecting a public comfort station at Astor Place and 8th street; fixing a standard for illuminating oil (for kerosene oil had come into very general use during the preceding decade, and many sad accidents occurred from the use of highly explosive oil); taking legal action against the escape of offensive odors from lime and shell burning establishments; making a survey of tenement houses throughout the city (for now it was recognized that unfortunate conditions in these were responsible for many of the epidemics); and taking precautions against the spread of hydrophobia by the killing of dangerous animals, and the regulation of the keeping of dogs in the city.

A development of the Department of Health that was much more far-reaching in its effect than had been anticipated, came as the result of the advocacy by Dr. Joseph D. Bryant while Commissioner of Health, of the establishment of a division of bacteriology and disinfection. The appropriations needed for the proper foundation of this division were not made until the epidemic of cholera in Hamburg and Altona, in 1892, sent a number of vessels to our port on which cases of cholera developed. The absolute necessity of being able to differentiate Asiatic cholera from cholera nostras or cholera morbus became clear, and could only be made by bacteriological examination. The Board of Estimate, in the face of the crisis, felt that it could not refuse the request, and their appropriation made possible the first municipal bacteriological laboratory in the world. The bacteriological control of diphtheria, of pulmonary tuberculosis, and the application of such tests as the Widal and the Wassermann followed, naturally, in their own time, and almost needless to say, New York's example in this matter has long been followed in every important city in the world.

DIPHTHERIA CONTROL

One of the most important features of the work of the Department of Health has been in relation to diphtheria. As can be seen in the chapter on Epidemics, diphtheria had been a serious factor in mortality in New York probably for several centuries before the term diphtheria was first used in 1857 in the report of the Board of Health. Two deaths were then attributed to this cause.

Park and Bolduan, in their monograph on "The Mortality of Diphtheria," in Nuttall and Graham Smith's "The Bacteriology of Diphtheria," pointed out the diseases under whose names diphtheria had masqueraded before that time, and they give a table which shows how the use of the term diphtheria spread rapidly so as gradually to absorb the other affections. Such terms as inflammation of the throat, inflammation of the tonsils, quinsy, sprue, ulceration of the throat and angina, almost disappeared in the course of the next ten years, while the deaths from diphtheria mounted from two to nearly 1,000. Croup still continued to be a term employed in competition with diphtheria, dividing the cases with it often almost equally.

During the next thirty years, croup came to occupy an ever smaller place, especially in the cities where the practitioners of medicine were more alive to the progress of medical science. It soon came to be recognized that it was quite impossible to differentiate clinically a non-diphtheritic sore throat from true diphtheria. With the invention of diphtheria antitoxin, the necessity for supplying that material to the city poor became manifest. There were thus two problems in diphtheria to be solved, and the Board of Health set about their solution. Dr. William H. Park took up the study of the bacteriology of diphtheria and added so much to the knowledge of that branch that he was able to bring about the establishment of diagnosis in diphtheria by culture. This method is now everywhere accepted as the only proper way to recognize diphtheria with assurance and keep the disease under control.

In 1894, under the inspiration of Dr. George Shrady, its medical editor, the *New York Herald* organized a popular subscription for a fund to be applied to the production of antitoxin in New York to be used in cases of diphtheria among the poor. This fund was offered to the Department of Health for administration, and brought about the establishment of the Health Department's Antitoxin Laboratory.

In September, 1894, the first antitoxin produced in the laboratory of the Department of Health was available for experimental use in several selected hospitals, and on January 1st, 1895, it was made available for use in all the hospitals of the city. Soon after this arrangements were made for its distribution without charge among the poor of the city. Manhattan and the Bronx were divided into districts and an inspector in each district was appointed

to administer diphtheria antitoxin on request of the attending physician.

The antitoxin laboratories led to the development of the bacteriological work of the department, and inaugurated the use of bacteriological methods in the diagnosis and surveillance of infectious diseases, as well as to the employment in increasing degree of more scientific procedures in connection with general sanitary work. New York was a pioneer in this matter, and the city's example was soon followed both in America and Europe.

REGULATION OF MILK SUPPLY

One of the most important developments of sanitary regulation for the prevention of disease in New York City is that of inspection of the city's milk supply so as to assure that only healthy milk shall be distributed. New York City's milk supply, consisting of more than two million of quarts a day, has to be gathered from a very wide area. Milk from nearly four hundred miles is brought into and distributed in the city, gathered altogether in some nine States as well as in Canada. To secure the healthfulness of this product was an immense problem, and we know the importance of its proper solution ever so much better now than when the earlier attempts at the regulation of milk supply were made.

Besides being the source of most of the diseases of infants, which add so much to city mortality, an unclean or improperly preserved milk supply, we have come to know in recent years as the source of a number of the contagious diseases. Milk borne epidemics of typhoid fever have been traced rather frequently during the past twenty-five years and not a few of the epidemics of severe sore throat with many fatal cases among them have been traced to milk infection. It is rather fortunate then that the question of the regulation of the milk supply for the largest city in the country was taken up twenty-five years ago.

The name of Ernest J. Lederle is prominent in most of the distinct advances that were made in this matter. As early as 1892, while acting chemist for the Department of Health, he brought about the seizure of milk from diseased animals. This made attention to the whole subject of the supervision of the milk supply more acute, and after considerable agitation of the subject the sanitary code of the State was amended so that no milk could be sold in the city of New York without a permit in writing from

the Board of Health and subject to the conditions determined by the department.

Before this, milk had mainly attracted attention of the Board of Health not so much because of the fear of its being a medium for the spread of diseases as because of its dilution and consequent lack of proper nutritiveness for children and invalids. Shortly after the establishment of the Metropolitan Board of Health, the board's chemist, Professor Chandler, pronounced milk sold in the city "generally free from injurious dilutions and untainted with disease." This pronouncement was, of course, from a chemist's standpoint, and there is no doubt at all that had he had any inkling of what bacteriology was to reveal, the chemist would not have made it with such confidence. He complained, however, that a fraud was perpetrated in the systematic dilution of the milk with water; for every three quarts of milk one quart of water was added. He estimated that this fraud cheated the inhabitants of the city to the extent of \$12,000 a day. In passing, it may be pointed out that here is the first hint of another activity of the Board of Health, one that was not to develop for more than half a century, however, namely, Professor Chandler's report of analyses of hair tonics, washes and restoratives, most of which he found to contain lead in considerable and even dangerous quantities. The nostrum evil had to wait for another generation before receiving the attention it deserves.

When, in 1902, Dr. Lederle first became the Commissioner of Health, the question of direct regulation of the city's milk supply wherever abuses were known to exist was taken up. A creamery was found removing cream from the milk, adding coloring matter to the skim milk, and using formaldehydes to preserve it. An order of the Board of Health was issued forbidding these practices, but was not complied with, and the Health Department of New York was told in effect that it had absolutely no jurisdiction outside of the city. A public hearing was held, at which the milk company was summoned to appear and show cause why its permit to sell milk in the city should not be revoked. The practices of the creamery, as discovered by the milk inspector, were put in evidence, and the Board of Health revoked the permit and the company was no longer allowed to sell milk in New York City. The effect of this action was to place the Health Department effectively in control of the milk supply of the city.

TUBERCULOSIS CRUSADE

New York was a pioneer in the definite attempt on the part of the municipality to solve the tuberculosis problem. As early as 1887, Drs. Loomis, Prudden and Biggs, as consultant pathologists to the Health Department, suggested that tuberculosis should be officially declared an infectious and communicable disease. While their recommendation in the matter was not adopted, a popular bulletin of information containing the newer knowledge of tuberculosis as a communicable disease was widely distributed, especially in the crowded tenement house districts of the city, and undoubtedly did a great deal of good. It was not until seven years later (1894) that the recommendation of the pathologists, largely through the persistence of Dr. Hermann Biggs and because of the recognition of how much his work meant, was accepted, and tuberculosis was made a notifiable disease. This was the first step in the modern municipal care and control of tuberculosis, and was followed by other cities, though not without some hesitancy. The value of it is now recognized by every one.

The tuberculosis movement has never stood still, and after the foundation of the Sanatoria, the Department of Health recognized the fact that to return these patients who had been cured or had their disease arrested in the sanatoria, to the unsanitary surroundings in which the affection had originally developed, would be to invite relapse. Koch, in Europe, and Flick, in this country, have insisted that tuberculosis is largely a house disease. It becomes attached to particular living quarters, and members of successive families who take up these quarters develop tuberculosis and die of it. The after treatment of the tuberculous then became an important development which now promises to be really helpful in the control of this endemic disease which has been such a serious factor in our mortality lists for many generations.

While sanatorium treatment was planned at the beginning only for incipient cases in whom almost without exception the disease might be cured or at least arrested so that the patient could go back to ordinary life, it was not long before it was recognized that this left large numbers of tuberculous patients in conditions eminently unfortunate for themselves, but more than a little dangerous to the public. When living in crowded tenement houses they became foci for the dissemination of the disease, and as some of

them lived for considerable periods the danger was not slight. The question then of sanatorium treatment of moderately advanced cases came up and received some proper treatment from the Department of Health. An opportunity was even afforded for these advanced cases to support themselves at some occupation in connection with sanatorium work. Sixteen of those on the pay roll of the female unit of the Otisville Sanatorium, according to the report of the end of 1914, were consumptives whose affection was too advanced to be eligible for admission to a sanatorium for incipient cases, although they have improved sufficiently to be able to support themselves and some of the other people as well. Some of these advanced cases have been on the pay roll for five years and more, and furnish an excellent example of cheerful helpfulness to patients.

VENEREAL DISEASES

After tuberculosis, the problem of the venereal diseases in city life came up for solution by the Department of Health, and the New York Board of Health did pioneer work in bringing them under the control of the sanitary authorities. Facilities were provided for the accurate diagnosis of the venereal diseases by means of microscopic examination of fresh smears, the Wassermann test, and the complement fixation reaction. Two clinics for the diagnosis of these diseases were established and a careful estimate of the probable number of adults in the population affected by these diseases made. The number of new infections occurring each year probably exceeds that of all the other notifiable diseases combined. Manifestly the next campaign for the protection of the health of the city must develop along these lines, though the ordinary attitude of the public toward any mention of these diseases makes it rather difficult.

THE HEALTH OF SCHOOL CHILDREN

It came to be recognized, toward the end of the nineteenth century, that the public schools afforded a ready opportunity for the spread of infectious disease. Children were often permitted to go to school while suffering from mild forms of contagious diseases, and thus became an easy means of transferring the disease to others. Contagious eye diseases particularly spread in this way, and in many cases seriously threatened eyesight. The immigration of large numbers of foreigners from Central and Eastern Europe

and the Near East brought a series of hitherto unusual affections to this country that had to be guarded against. In many homes both father and mother worked, and even though mother's work might be at home she had much more time when the children were at school, so that unless they were absolutely bedridden they were sent out each day. Besides, for many of these foreigners schooling had become a sort of fetish, and they did not wish their young folks to miss any of the possible advantages.

The need of careful health inspection of the schools had become very manifest, when in March, 1897, one hundred and fifty medical inspectors were appointed for the schools at a salary of thirty dollars per month. They were to visit the public and free schools of Manhattan each morning before ten o'clock, and examine children who were suspected of suffering from contagious disease or were thought to be ill in any way, who were sent to them by teachers and principals. All cases involving possible contagion that were discovered were to be excluded from school attendance. This placed the burden of the recognition of early signs of disease on the teachers, who were not trained for that function, and after a time it came to be recognized that only outspoken disease was reported, while many minor but significant affections failed to attract attention. After five years the salary was increased to \$100 per month, and the inspectors were required to give a longer time to the work and to make a routine inspection of all children, particularly for the purpose of detecting contagious eye and skin diseases. Great benefit for the general health of the children of the city was thus secured, though not without friction from those who oppose any novelty on general principles and who failed to realize how much the crowded conditions of school children who came from all manner of homes required some such special precautions. It soon came to be appreciated that the problem of backward children which, with the enforcement of the laws requiring compulsory attendance of all children, came more and more into the foreground, was to a great extent a medical question. Many of these backward pupils were not mentally defective but were only suffering from various physical defects, as of vision, hearing, and the like, which practically made it impossible for them to keep up with normal children unless these were corrected, and a great many of them were thoroughly capable of correction. Children's clinics were established then, only here once more op-

position was aroused and many failed to comprehend the benefit that would be thus conferred, and there was even a setback in the movement.

School health inspectors soon came to appreciate also that many of the children came to school with such insufficient nutrition as made the possibility of their taking advantage of the education provided for them extremely dubious. Often they had but a piece of bread and a cup of coffee, and some of them not always this regularly. Their midday lunches were often very scant, unsuitable, and sometimes no lunch at all was provided. The only meal that many families had that deserved the name of a meal was in the evening, and for the following twenty-four hours the children had to live on it, and so their nutrition was at very low ebb during school hours, and intellectual progress was seriously hampered. Here was surely a medical problem, and the Board of Education, recognizing its import, endeavored to provide at very low rates nutritious meals for school children.

HEALTH EDUCATION

For some years it has come to be recognized that for disease prevention, health education—that is, the diffusion of information that would enable people to avoid disease—was much more important than quarantine or segregation after disease had begun to spread. The lesson had been learned particularly in connection with tuberculosis, and then in the promotion of the milk stations which gradually became child health stations. The poor needed not only the provision of pure milk at reasonable prices, but also such instruction in the care of very young children as would enable them to avoid the many dangers to which infants are liable. It was recognized that just this same thorough and scientific instruction in relation to the preservation of health was needed for people at all ages. The Bureau of Public Health Education was organized then, and promises to accomplish much for the elimination of many disease conditions consequent upon carelessness or ignorance. In a word, the city has come to recognize its duty not only toward community health, but also toward individual health, in order to preserve the community from disease dangers.

CHAPTER XVIII

NURSING IN NEW YORK

THE distinction of having made the first attempt in this country to train nurse attendants belongs, according to Nutting and Dock, in their "History of Nursing," to New York Hospital. It may be recalled that the hospital received its charter in 1771, but the fire two years afterwards and then the use of the subsequent nearly completed structure by British soldiers for a barrack, prevented its employment for its original purpose as a hospital until long after the Revolution. Indeed it did not so far recover from the disorganization of the Revolutionary War as to be able to receive patients until January, 1791. As the hospital was patronized by some of the most prominent and wealthy citizens of New York City, its attendants were of much higher grade than those at the Almshouse Hospital, and so it is easy to understand that the necessity was recognized to give them some definite professional training and to create, as it were, a body of women who could be depended on to be of special help to physicians and surgeons, and to lift not a little of the burden of responsibility for the care of the ailing as regards minute details, from the shoulders of the medical attendant.

To Dr. Valentine Seaman, one of the attending physicians of New York Hospital, is due the honor of having conceived and initiated the first system of instruction for nurses on the American continent. This fact is commemorated by an inscription below his portrait in the hospital which contains the words: "In 1798 he organized in the New York Hospital the first regular training school for nurses, from which other schools have since been established and extended their blessings throughout the Community." In connection with the Maternity Department of the New York Hospital, Dr. Seaman, who was far ahead of his time in liberality of view, organized a course of lectures, some twenty-four in number, for nurses, including outlines of anatomy, physiology, and the care of children. The three concluding lectures of this course

have been preserved in a small volume called "Midwives' Monitor and Mothers' Mirror," published by Isaac Collins in 1800.

This foundation at the New York Hospital is all the more interesting because it represents a definite attempt to organize to some degree at least the teaching and training of nurses here in America, long before even the well-known foundation of the Fliedners at Kaiserswerth, which is usually mentioned as the first attempt at the modern training of nurses. The Fliedners founded the first school for deaconesses in October, 1836. This became the model for similar institutions in Germany and elsewhere, and Miss Nightingale, to whom we owe the organization of the training of secular nurses, took her course with the Fliedners at Kaiserswerth while unconsciously preparing herself for the magnificent work that she was to accomplish in the Crimean War. It was from the training school founded as a testimonial to her in connection with St. Thomas' Hospital, London, that Nightingale nurses went out everywhere, particularly in the English-speaking world, to regenerate nursing. It was from this source that Bellevue obtained, a dozen years after this foundation, the nurse who was to introduce the trained nurse as an institution into America.

The organization of some training for nurses at New York Hospital seems to have had very little if any effect outside of that institution. Indeed, it seems likely that after Dr. Seaman's death much of his good work in this matter fell into desuetude, though New York Hospital continued to have an excellent class of nurses considering the conditions that existed generally. On the other hand Bellevue's unfortunate provision of nurses made any proper care for the ailing poor almost impossible for they were recruited as we shall see from the lowest classes and often found their way into the wards as nurses *via* the penitentiary. The same state of affairs existed practically everywhere throughout the country, and the history of Blockley in Philadelphia is in this regard very similar to that of Bellevue. This will not be surprising once it is realized that the first half of the nineteenth century represented the climax of the dark period in the history of nursing which, as Miss Nutting and Miss Dock suggest, began from the latter part of the seventeenth century and continued until the middle of the nineteenth. "During this time," they say, "the condition of the nursing art, the well-being of the patient and the status of the nurse all sank to an indescribable level of degradation." It is

indeed hard to understand, though not impossible to explain, that after centuries of good nursing and fine hospital construction and organization this decadence should have set in in a great social need and proceeded to such utter demoralization—but the facts are there in history.

The sad condition of nursing which developed in our city hospitals generally was not any worse but if anything better than in Europe. When about the middle of the nineteenth century inquiries were made as to the character of nurses, one hospital superintendent in England declared that he "always engaged them without any character, as no respectable person would undertake so disagreeable an office." Another wrote, "If I can but obtain a sober set of nurses it is as much as I can hope for." More than that was not looked for. "I know," says another, "that a respectable woman was declined the other day as being too good for the situation." Superintendents did not expect too much of them; "the duties they have to perform are most unpleasant, and it is little wonder that many of them drink." This was the state of affairs in England. Bellevue and Blockley were no worse, but rather better, than the English hospitals.

At Blockley in Philadelphia there was in the first half of the nineteenth century "one short interregnum of peace that broke the long and distressing reign of violence, neglect and cruelty." (Nutting and Dock). This showed clearly, however, what discipline and organization might do. It occurred in 1832 when a severe epidemic of cholera led the attendants to demand more wages which was granted. They then promptly spent the money for liquor and an orgy with actual fighting over the beds of the sick occurred. The nurses had to be dismissed in a body and in their quandary the hospital guardians applied to Bishop Kendrick for Sisters of Charity from Emmitsburg. The Sisters started two hours after the summons was received; order was restored in the desperate situation, and the Sisters were asked to remain after the epidemic was over, but had other duties to perform. On several occasions there was question of the employment of the Sisters to take charge of the nursing at Bellevue, but here too the Sisters were already overburdened with duties, and the opening of St. Vincent's Hospital in the early fifties concentrated their efforts on this.

Trained nurses did not take their place in Bellevue, the chief public hospital of New York City, until 1872, when they were in-

roduced by Dr. Stephen Smith, still happily with us. Bellevue's development as a hospital had been hampered in the early times by its connection with the almshouse and also with the penitentiary. When the almshouse quarters, cells for prisoners and wards for the sick and the insane, were all in the same building with the rooms for the resident physician and the nursing attendants, it is not surprising that the standards of care for the sick were rather low. The paupers numbered from 1,600 to 2,000, and among them were often as many as 200 sick. The nurses, so called by courtesy, were detailed from the prison and were appointed in the proportion of one for some twenty patients, the number being increased when severe epidemics were rife. The "ten-day women," that is, those who had been arrested for drunkenness or disorderly conduct and had been given ten days in prison, were as it were, paroled as soon as they had recovered sufficiently to be of service, provided they would take up nursing in the hospital wards. Only those were chosen, as a rule, who had had some family experience, and were therefore presumed at least to know something about caring for the ailing.

An investigation in the late sixties of the last century of the conditions which prevailed at Bellevue because of the utter inefficiency of the nurses, led to the appointment of a committee from the State Charities' Aid Association, which visited the hospital and was so shocked by what it found that it realized that only a complete reform of the internal management of the hospital would eradicate the abuses. Above all, it was recognized that with women nurses of the character then employed, reform would either be impossible or would be at most temporary, and that in this problem of increasing the efficiency of the nursing and the provision of properly trained women for the purpose lay the secret of modifying Bellevue for the better so as to keep it at least from being a disgrace.

Dr. Gill Wylie was sent to England to report upon the training school for nurses which had recently been established by Florence Nightingale in connection with St. Thomas' Hospital in London. Dr. Wylie came back with a very favorable impression of what he had seen in London, and while he realized all the difference in conditions between St. Thomas' and Bellevue, and even appreciated some of the details of English methods that would probably be unsuitable in this country, he strongly recommended to the Governing Board of Bellevue the issuance of an invitation to the Train-

ing School at St. Thomas' to send over some of their sisters to help in creating a training school similar to that of London for New York. This recommendation was referred to a committee consisting of Dr. James R. Wood, Dr. Alonzo Clark and Dr. Stephen Smith. It may seem strange now that Dr. Smith was the only one who favored the complete adoption and immediate putting into effect of Dr. Wylie's recommendation. The reason for the opposition of Dr. Wood and Dr. Clark was that they felt sure that after having been trained as nurses the women would consider themselves quite capable of practising medicine for themselves, and would go out into the country and do so. The State laws regulating the practice of medicine were so lax at this time that it probably would have been quite possible for the nurses to have done this and yet evade legal penalties.

Dr. Smith asked that at least one ward, his own, be opened up to the new system for the purpose of trying out the "trained nurse" idea. Miss Nightingale accordingly was asked to send an instructor, and it was as her personal choice that Sister Helen came. Dr. Smith has often told the story of Sister Helen's work, and how her firm and determined character and thorough grasp of the situation was exactly what was needed for Bellevue at the time. The story of how the change was brought about and the gradual replacement of the old order by the new deserves to be told in Dr. Smith's own words: "We hired a building close by, where the nurses could be trained, and the school soon proved so efficient that it was not long before the old nurses were entirely supplanted. They went with very bad grace, however. They commented on the situation rather volubly with their tongues, and punctuated and emphasized what they had to say by throwing stones at their successors in the Bellevue Hospital grounds, as also through the windows of the nurses' building." At first a single year of training only was required, later came a two-year course with a regular system of instruction and graduation, and the conferment of a nurse's certificate at the end of it.

Until the experiment of their success or failure could be tried out the nurses took charge only of the women's wards. If possible, the condition in the male wards had been worse than that of the female wards at Bellevue, but there had been no thought of asking "lady nurses" to care for men under the awful conditions which prevailed. When Dr. Stephen Smith, having found them so success-

ful for his women patients, proposed to install trained women nurses in his male wards there was at first tremendous opposition aroused in the medical board. It was said that the male patients of Bellevue were, as Dr. Smith has reported it, "nothing but a raft of bums from Five Points and the Bowery, and to send women nurses among them would be an outrage." This opposition came from just the same men who had originally opposed the idea of the introduction of nurses at all so strenuously. They had become quite converted now to the idea of women nurses for the female ward, and indeed would not have gone back to the old system under any consideration. Just as they could not trust the nurses themselves before, now they felt that they could not trust the patients to the care of these lady attendants as they had come to think of them.

When the problem was put before Sister Helen, who knew exactly the conditions that existed in the male wards, she had no objection at all to providing a nurse for them. Dr. Smith took the nurse in and introduced her to the men. They received her with the greatest enthusiasm. In a week there was a very different spirit in the ward. In a month it had come to rival the female wards at their best. The amelioration of conditions was so remarkable that within a very short time Dr. James Wood, who had been particularly pronounced in his opposition to the idea of having women nurses for the male wards, asked that nurses be assigned to his own male wards.

During the course of the next ten years it became perfectly clear that the nurse was not only a valuable auxiliary in the care of hospital patients, but really quite indispensable in the serious practice of medicine and surgery in institutions. The success of the nurses at Bellevue attracted the attention of the country, and it was not long before the trained nurse was introduced everywhere, though not without opposition and misunderstanding.¹ Every-

¹ The necessity for trained nurses had been coming to be rather widely recognized at this time. Professor Gross of Philadelphia had urged the training of nurses in his annual address as the President of the American Medical Association in 1868. Dr. Horatio Storer, in the little volume issued in the "Tracts for the People Series" on "Nurses and Nursing" (Boston, Lee & Shepard, 1868), outlined very clearly the organization of trained nursing as it came into existence in the next decade. He said: "There must, sooner or later, be established, in connection with all large hospitals, scholarships, as it were, for nurses, corresponding somewhat to those already provided for ambitious medical students, who, for six months or a year, receive

where the feeling of physicians seems to have been that the nurses would surely take up the practice of medicine in some irregular fashion if they were given all the knowledge that a good course of training demands. We who know how little justification there is for this, look back somewhat in surprise at this almost universal false impression, but it was due to a great extent to the lax state of medical practice laws and the abundant irregular practice that physicians saw around them. We know now that three things go together:—good surgery, good nursing, good hospitals. It is quite impossible to have good surgery without the other two members of the triad. The decline in nursing and hospital organization was partly due to the decline in surgery itself, though it is very probable that even the decline in surgery was largely led up to by the gradual deterioration in nursing and in hospital care and construction which came in during the seventeenth and eighteenth centuries. Miss Nutting and Miss Dock have traced this deterioration to the exclusion of women from any but subordinate places in hospital control and administration, and there seems to be very good reason to think that whenever women are not coördinate factors in institutions for the care of the ailing and children, degeneration almost inevitably takes place.

Certainly the presence of women of intelligence and character in connection with hospital work has served to lift up our hospitals to a much higher plane. Besides, the coming of the trained nurse in the hospitals has brought with it her helpful presence in the sick room outside of hospitals, until now she is practically an indispensable factor in the care at least of surgical and obstetrical cases, and in severe and prolonged affections of every kind. Bellevue's venture in seeking to improve the nursing system has had a very ample reward, and the coming of the nurse may well be said practically to have revolutionized medical and surgical practice in this country.

the appointment of resident or house physicians and surgeons. Many capable women, under such circumstances, would be found to gladly offer their services gratuitously in return for such privileges, and the honorable certificate a faithful performance of duty might justly receive. Instruction might thus be afforded to nurses, not merely at general, but at special hospitals, the advantages of which are becoming recognized in every large city and to aid in the establishment of one of which this little book has been written.''

CHAPTER XIX

THE TREATMENT OF TUBERCULOSIS

AN especially interesting and important chapter in the history of medicine in New York is that which concerns the treatment of tuberculosis by the modern successful methods. The first steps in the development of the open-air treatment of tuberculosis in America not only were made in New York but they were absolutely original, a distinct discovery that owed nothing to foreign sources, though the open-air treatment of tuberculosis had been successfully developed in Europe, but had not as yet attracted the attention of the American medical profession. The pioneer in the outdoor treatment of tuberculosis in America was Dr. Trudeau, of Saranac, and we owe his initial experiences in the matter to the happy accident of his own liking for the outdoor life which he would not abandon even when the advances of pulmonary tuberculosis made his stay in the Adirondacks for the winter time particularly seem almost surely suicidal. His success with his own case represented the foundation of an important new development of American therapeutics.

The status of the treatment of tuberculosis in America before this, though of course it was not typically American, represented the ordinarily accepted views of physicians all over the world with regard to the treatment of pulmonary consumption at this time. It can be well appreciated from what Dr. Trudeau has told us in his autobiography (Lea Bros., New York and Philadelphia, 1915), of his experience with his brother's case. Dr. Trudeau, then a young man who had been planning to enter the navy, took it on himself to nurse his consumptive brother, stayed with him most of the time night and day, often even slept with him, and thus probably developed his own tuberculosis. The physician's principal instruction was that the patient should never be allowed to be touched by cold air, for this would surely give him a "fresh cold," and as a consequence the window was scarcely ever opened, even the door was kept shut except when absolutely necessary and fresh air was excluded just as far as possible.

It was in direct contradiction with this medical practice, while living out of doors in the Adirondacks, often when the temperature was below zero, that Dr. Trudeau succeeded in curing himself, though the cure was not undertaken consciously, but such was his delight in the outdoor air that he ventured it to satisfy his craving for touch with nature and then found improvement come of itself.

A number of physicians had recognized how much fresh air and good feeding meant for consumptives before the latter half of the nineteenth century, but somehow their discovery from their practical experience in this matter failed to have weight with mankind. Various theories of the causation of the disease came in to modify treatment and to make it artificial, and as a consequence the best elements for the therapeutics of this disease were obscured over and over again. I believe that even Galen declared that after having tried many remedies, and above all many drugs, for consumption during his medical career, he had finally come to the conclusion that the best treatment for consumptives was fresh air and an abundance of good food, and that the best food for them was milk and eggs. It is curious to read the story of some of his experiences and to find how many remedies he tried at one time; for instance, he was recommending a dose of arsenic "about the size of a pinch of salt for an egg," to be taken three times a day, quite as confidently as the kakodylates were being recommended a few years ago.

Early in the nineteenth century both Graves and Stokes, the Irish physicians, recognized the necessity for feeding febrile patients, and Graves declared that he would be willing to have as the motto on his tombstone the simple words, "He fed fevers." Stokes appreciated also the value of outdoor air, and hints of this had been in many minds. Personally I know of half a dozen men who, suffering from consumption in their early manhood, were recommended by physicians to get some outdoor occupation, or to live an outdoor life, and at least two of them seem to have been saved by the same means which helped Trudeau somewhat—their interest in hunting. Trudeau tells the story of the New York consultant who told the young fellow who came in suffering from pulmonary tuberculosis, "Get a position if you can, as a stage driver in the country, and keep at it for two years. That's your one chance for recovery from the disease." A good many of the men who were still alive in rather advanced years at the end of the nineteenth

century, though they had a history of having suffered from tuberculosis in earlier years, had also a story of having for some reason lived the outdoor life and so put themselves in the best possible circumstances to overcome the infection.

In spite of these many scattered hints, however, most American physicians as late as the third quarter of the nineteenth century were treating tuberculous patients in almost hermetically closed rooms. Of course they were also treating most of their fever cases with warm drinks, forbidding them cold drafts, even of water, lest they should chill them. There were many experiences detailed throughout the country which negated these fears, but the old tradition of "catching cold" from cold water or cold air maintained itself. In the chapter on "Early Nineteenth Century Medicine, Some Prize Essays," quotations from two of these essays crowned by the New York State Medical Society in the early nineteenth century make it clear that the notions with regard to fever patients catching cold in cold air or cold water were due to old foggy theories, and that tuberculosis was shown not to be due to the "catching of cold," while fever was to be treated by applications of cold water, or in defect of that, even with exposure to cold air. All the elements for an important advance in knowledge were present in our medical literature, but the advance itself did not come until after Trudeau's practical work at Saranac, and above all his demonstration by his own improvement that the fresh air treatment could keep people from the grave.

The early days of the sanitarium treatment at Saranac were dubious enough. At first only two patients could be accommodated, and it looked as though it might be long enough before there could be any real demonstration of the value of the therapeutic principle involved. Dr. Trudeau's persistence, however, and above all his successful work in other departments of the knowledge of tuberculosis, attracted attention to the treatment which he advocated. His demonstration of the possibility of diagnosing tuberculosis in a comparatively early stage from the presence of the tubercle bacilli in the sputum, was of itself sufficient to revolutionize the knowledge of the disease in this country, and above all to make it very clear that diagnosis was usually delayed long beyond the inception of the pulmonary infection. If Trudeau had done nothing else but thus emphasize that early diagnosis was extremely important for the successful treatment of the disease, his name



Distant View of New York State Sanatorium



The Saranac Laboratory bequeathed by Dr. Trudeau to
the Trudeau Sanatorium

would deserve to be preserved in benediction in the annals of American medicine. Unfortunately it had been the custom to think that patients were consumptive only when a considerable amount of pulmonary involvement could be actually demonstrated. The idea that tuberculosis of the lungs might be recognized with reasonable certainty before there were any serious lung symptoms had never occurred. The diagnosis with the microscope and the bacilli in the sputum did much, but Trudeau did far more than this for the early diagnosis of tuberculosis, and it is the early recognition of pulmonary consumption that has done most to make the open-air treatment successful. Nice developments of diagnosis by which the size and shape of cavities could be determined, Wintrich's sign, and the others which referred to advanced stages of the disease, were of very little practical value and at most only of academic interest. Prolonged expiration over a limited area and slight differences in percussion sounds, these came to be the important diagnostic features to make early recognition of tuberculosis possible.

Later, on Trudeau's cultivation of the tubercle bacillus and its distribution in pure culture to the laboratories of medical schools, called emphatic attention to the fact that in spite of the most serious handicaps and drawbacks he was doing magnificent scientific work in the distant Adirondacks. This gave physicians confidence to send him patients, and gave patients that confidence in him which is so important for any mode of treatment for tuberculosis if it is to operate under the most favorable circumstances. Gradually then the institution which had first had room only for a few patients, grew by the accretion of buildings until it came to be an important open air institute for the treatment of tuberculosis, and the model for many others in this country. The story of its growth has been best told by Dr. Trudeau himself in his autobiography. Its work may not only be studied in the medical literature of this country, but it has entered into the warp and woof of our medical history because of the many similar institutions which it influenced, and above all because of the precious lessons for the handling of tuberculous patients at their homes which Trudeau's methods brought to the general practitioners of the country.

The Adirondacks came to be a favorite region for tuberculous patients. Many of them went too late, many of them suffered severely from the hard climate of the winter time without any

adequate compensation in renewed health, but many were saved, a few to live their lives elsewhere, but many, like Dr. Trudeau himself, to live in the North Woods or some of its many towns and villages, conserving their health where it had been regained after its loss because of infection and neglect in the milder climate farther south.

It is probable that the changeable climate, or rather the frequent variations in temperature in the Adirondacks, represent an important curative factor for the disease. A distinguished English clinician once declared that probably the best possible tonic for sufferers from pulmonary tuberculosis was a variation in temperature of twenty to thirty degrees in the twenty-four hours. This causes direct and active stimulation of the circulation, and probably thus aids the defective lung tissues to accomplish their work of oxidation more thoroughly. One thing is certain, that while tuberculous patients may be much more comfortable in mild equable climates where there is very little variation of temperature during the day and comparatively small changes from season to season, such patients do not get better under these more comfortable circumstances, but actually relax, and while the progress of the disease may be slow, it is almost inevitable. Cures for tuberculosis have, on the contrary, practically always taken place in climates with considerable daily as well as seasonal variations of temperature.

This is probably the main reason why altitudes have so often been looked upon as presenting favorable climatic conditions for the cure of tuberculosis. For a time it used to be thought that the more rarified air of altitudes, by giving the lungs more exercise, stimulated the circulation within them and thus added to their vitality and consequently to their power of resistance to the advance of the disease. Further experience has shown, however, that high altitudes, inasmuch as they increase the respiratory movements of the lungs, are probably unfavorable to the cure of tuberculosis. The setting of the affected lung absolutely at rest by the creation of an artificial pneumothorax and the various modes of injecting inert gases into the pleural cavity for this purpose, have had too many successes and are still sufficiently used to make it very clear that this is not merely a theoretic but a practical method of treating tuberculosis. Very high altitudes, because of the rarity of the air and the consequent necessity for more frequent and more extensive

respiratory movement, not only favor hemorrhages, as has been so often illustrated in the case of patients going west over the divide of the Rocky Mountains, but also in ordinary practice in such high altitudes.

Whether the variations in the Adirondack climate or something else was the therapeutic factor, the successful cures at Trudeau's Sanitarium soon attracted attention to the region, and especially to Saranac Lake, until the village was soon crowded with consumptives in all stages and especially advanced conditions, hoping against hope to secure relief from the disease. It was not long before it became clear that other institutions would have to be established to care for tuberculous patients, since Trudeau's Adirondack Sanitarium could not possibly provide for all who cared to enter, and besides could admit only those in initial stages of the disease. In response to this demand other sanatoria soon came to be established—Gabriels, not far from Paul Smith's, was founded in 1895; Kushaqua Sanatorium for Girls at Lake Kushaqua in 1898; the Raybrook State Sanatorium for Consumptives, midway between Lake Placid and Saranac, in 1900; and St. Mary's Hospital, with provision for advanced cases of tuberculosis, in Saranac Lake in 1910. Each of these institutions deserves special notice by itself.

Foreign experience with the success of the sanitarium treatment of tuberculosis, confirmed as it was by Trudeau's work at Saranac, led to the growth of the movement for the erection of the State Hospitals for Tuberculosis in which the tuberculous poor might be cared for. It was felt that in this way not only might the individual patient be benefited, to the great economic good of the community, but also a foci of the disease might be eliminated and its spread prevented. The Legislature was slow to recognize all the benefits that might be derived from the movement, however, and Massachusetts anticipated New York in the erection of a State Sanitarium. The definite recognition of Trudeau's great work in the Adirondacks came, however, when it was decided to build the first State Hospital for the Tuberculous at Raybrook, midway between Saranac Lake and Lake Placid.

The success of treatment in the Adirondacks led to the belief that other mountain regions of New York State, where the air was very pure and the elevation not very high, might serve a similar purpose. Above all, it was felt that the Catskills farther south

and with their milder winters might prove particularly favorable for the location of tuberculosis sanatoria. Four years after the foundation of the Adirondack Cottage Sanitarium an attempt was made in 1888 to found a sanitarium at Tannersville, in the Catskills, but the public was not yet ready to accept the idea that fresh air in a climate with large daily variations of temperature and without the influence that very high altitude was supposed to have, could prove absolutely curative for a disease that for so long had seemed incurable. Continued success in the Adirondacks, however, and the opening up of other sanatoria there, led to the establishment of the Loomis Sanitarium at Liberty, which has proved so successful, and to the general recognition of the Catskill region as quite equal to the Adirondacks in curative power.

After the success of the Adirondack Cottage Sanitarium became assured, the movement to secure similar treatment for as many as possible of our consumptives took on such force as to make New York an example for other States. Indeed, even before this there had been a very definite recognition of the necessity for organized care for consumptives, and New York City had taken certain steps which long anticipated organization elsewhere in this matter. When Dr. Alfred Meyer toward the end of the nineteenth century urged the necessity of providing a tuberculosis sanatorium for New York City's consumptive poor, he called attention to the fact that nearly half a century before a definite effort in that same direction had been made in New York City. A society was organized in 1855 with Peter Cooper as president, and Dr. Alonzo Clark and other well known citizens as trustees, which obtained a charter for the purpose of providing an institution for the care of the city's tuberculous poor. The arguments advanced for the need of such an establishment, besides emphasizing that it would be a great Christian charity, are exactly such as were adduced nearly half a century later to secure a similar purpose.

After the provision of State care for the tuberculous, the necessity for city care for its own people suffering from this disease was the next almost obvious step. Patients suffering from tuberculosis in large cities almost inevitably become foci for the dissemination of the disease, and thus may be serious factors in the morbidity and mortality rates. It is by the elimination of such factors that a city's health can be improved just in accordance with the willingness of the municipality to make pecuniary sacri-

fices for the people. It took years, however, to bring the city fathers to recognize the plain duty in this matter, and Dr. Alfred Meyer did more than any one else to keep alive the movement for this purpose, until finally it was crowned by the erection of the sanatorium at Otisville, which has accomplished such good work.

The further development of sanitarium care for the city's tuberculous poor and indigent is very well illustrated by the erection of Sea View Hospital on Staten Island. This is one of the largest and most completely equipped set of buildings anywhere in the world for the care and treatment of tuberculous patients. Altogether the hospital has accommodations for 2,500 patients. Situated on high ground in the centre of Staten Island, it is close enough to the centre of the city to make the transportation problem comparatively easy, and yet it has all the advantages of a country location. Close to the sea, it has the benefit of the cooler sea air in the summer, and yet the tempering of the winter storms. It has been very successful, about four out of ten patients being able to leave the hospital with their disease arrested, or at least their symptoms greatly relieved and their tuberculosis quiescent. In connection with it there is a farm colony, the employees of which are recruited principally from the Municipal Lodging House. This gives the man out of employment outdoor occupation under the most favorable circumstances. Not infrequently those who have to seek the shelter of the Municipal Lodging House are already sufferers from tuberculosis, but dread very much the idea of having to go to an institution for their affection. They are thus tempted to remain as foci for the spread of the disease often in crowded quarters of the city. Their experience at Seaview, however, removes the old feeling of deterrence for hospital care, and has proved another factor for the solution of the tuberculosis problem.

In connection with the immense plant at Seaview are the old folks' cottages on the Seaview Farm. These cottages provide shelter under very favorable circumstances for old people, where husbands and wives may live together toward the end of their lives. This is said to be the only almshouse under municipal or government care in the world, where husband and wife may pass the declining years of their lives together without the sad necessity of being separated which governmental wardership usually implies. It is mainly the effort to solve associated medical problems that has brought about this very satisfactory solution of an important social problem.

CHAPTER XX

WOMEN IN MEDICINE

NEW YORK STATE has the honor of having granted the first medical degree to a woman in modern times, and of having helped materially in making it possible for women to take their places properly in professional life. Now that a great war has largely increased the demand for medical services and emphasized the need for many more capable of giving professional care to our generation, it seems indeed fortunate that over half a century ago New York should have been a leader for the English-speaking world in this regard, for it is the English-speaking world that has most needed and most benefited from the trained skill of women physicians in the last three years. Their work in the Balkans in the dark hours of the second year of the war there, and in England itself in the hospitals for the more severely wounded whose chronic conditions require sympathy as well as trained skill, proved to be only the prelude of what they were ready to do when the United States found herself compelled to take part in the war.

The story of how New York came to be a pioneer in modern medical education for women is that of a new era in the history of medicine. For so far from this being the first incident of the kind in medical history it is interesting to recall that the very first medical school of modern times, that of Salerno, not only granted degrees freely to women but even had a number of women professors and placed the department of women's diseases entirely in charge of women. The influence of the Benedictine Monks, whose school at Salerno was a nucleus for the University there, might be expected to preclude the possibility of such opportunities for women, but only by those who do not understand the monastic spirit. The great Benedictine convents were providing better intellectual opportunities for women, Mrs. Putnam declared—and she was the dean of Barnard for many years and therefore should know—than any of the modern colleges for women. It was very natural then that under similar auspices at Salerno women should have had their opportunities in medicine also.

This fine initiative in modern education at Salerno spread to the great Universities of North Italy, but was not favored in the West of Europe, the Héloise and Abelard incident probably serving as a serious inhibitive factor. In the centuries after the Middle Ages ever fewer and fewer opportunities for feminine education were provided in Western Europe until in the nineteenth century it seemed presumptuous for a woman to ask for the higher education and almost ridiculous to demand professional training. A definite reaction against this narrowness which was due to a great decadence in education, for the women of the Renaissance had been provided with the same educational facilities as the men, gradually made itself felt in the nineteenth century, and about the middle of it a number of women of character and persistence took on themselves to secure higher education for women, and also, if possible, professional opportunities.

The pioneer of these in medicine was Elizabeth Blackwell (1821-1910), who was born in England, but brought to this country when she was very young by her father, who died a few years later, leaving the mother and daughters to make their way as best they could. Miss Blackwell's father had been a strong anti-slavery man, and he had gone to Cincinnati before his death with the hope of introducing the cultivation of beet sugar to deal a blow at slavery and its relation to cane sugar making. After his death, mother and daughters continued to do anti-slavery work, so that the spirit of sacrifice and independence of mind with thorough disregard for the opinions of others whenever they felt they were right was fostered in such a way as to prepare Elizabeth for her pioneer work for women in medicine. In spite of a distinct deterrence for physical ills and medicine, the sickness of a woman friend led her to realize the need of women physicians and made her resolve to open the profession to her sex. She found it impossible, however, to secure any regular education. She studied medicine with a clergyman friend who had been a physician, and continued private medical studies for some years and then studied anatomy under Dr. Allen in Philadelphia, but in spite of her talent and recognized capacity for medical knowledge she was refused admission to each of the four medical colleges of the city. Similar applications made to the New York City medical schools were also refused, and then she proceeded to write to the various medical colleges situated in smaller centres.

Finally she was admitted to Geneva Medical College, as we have told in the chapter on "Medical Education Outside New York

City." The story of her admission and the effect upon the students was well told by Dr. Stephen Smith in his memorial address for the Doctors Blackwell at the Academy of Medicine, New York, January 25th, 1911. He was a medical student at the Geneva Medical College during the session when Miss Blackwell was admitted. He tells particularly of the rowdyism of the medical students, which was so annoying that the residents in the vicinity endeavored to have the college declared a public nuisance. It was into this group of students that Miss Blackwell came. Dr. Smith's own words are historical:

It is quite impossible to magnify the power of the personality of Miss Blackwell over the lawless elements of that class. Though there were the same disorder and disturbance in her absence, as before her admission, yet the moment that she entered upon the platform the most perfect order and quiet prevailed until the door closed behind her. This influence of her presence continued unabated during the entire session. Many of the older students stated that this was the first course of lectures in that College during which they were able to take full notes.

In other ways than by the suppression of rowdyism, through the effect of her presence Miss Blackwell's influence was felt in the medical school life. The license, for no other word could be properly applied to it, which some of the professors of medicine allowed themselves in touching on sexual subjects to medical students, was extremely unfortunate. It undoubtedly had a lamentable effect upon student morals, for it gave the impression that men were scarcely expected to control themselves in these matters. It had been for generations the custom of the professor of anatomy particularly to relieve the seriousness of his subject by jokes that were extremely dubious, when not positively obscene. Geneva had been no exception in this matter, and so the climax of difference that a woman's presence could mean in a medical school at that time came in the department of anatomy when the organs of reproduction were to be demonstrated. Dr. Stephen Smith has told very well the story of the Professor of Anatomy who "was a rollicking, jovial, fun-loving man, who seasoned his lectures plentifully with anecdotes, nor was he very choice in the use of his language. The part of his course which he was now approaching was especially adapted to illustration by vulgar stories, and hence was looked forward to with great relish by the reckless members of the class. They were doomed to disappointment, for the presence of Miss

Blackwell led to the suppression of every objectionable feature of the course.

Dr. Smith has expressed the feeling that has grown on him ever since that experience nearly seventy years ago that co-education, even in medicine, under proper conditions cannot but prove beneficial to all concerned. He said:

This personal experience of the moral influence of a most unpretentious woman, upon a class of untrained and undisciplined young men, determined affirmatively, in my own mind, more than threescore years ago, the question of the propriety of the co-education of the sexes even in medical colleges. Subsequent experience in the clinics of Bellevue Hospital which were attended by the students of three colleges, and to which women students were admitted, confirmed my early experience. The promiscuous class of cases which are brought into these clinics, male and female, and the necessary exposure of the patients in operative procedures, afforded the highest possible test of the proprieties of the occasion. There was never an instance in my observations when the women students present were treated rudely, but, on the contrary, their presence always prevented any cheering, jeering, or unseemly behavior.

As an abstract proposition the co-medical education of the sexes would naturally be decided in the negative. It has been so decided many times in this country and abroad by prominent medical educators who have had no experience. When put to a practical test, the anticipated improprieties have not occurred.¹

For a time during the summer between her two years at Geneva, she obtained permission, thanks to a little ingenious political lobbying by friends, to spend some time studying in the hospital wards of Blockley Almshouse, Philadelphia. She was given a room in the women's syphilitic department, the most unruly part of

¹The awarding of the degree to Miss Blackwell aroused widespread comment, and brought the whole subject of medical study for women directly before the English-speaking people. As a rule the newspaper comment was not unfavorable. Men like a brave woman, and they could not help but admire Miss Blackwell's pluck, and there was a note of this in nearly all the editorial comment. The medical journals and the medical profession were almost a unit in looking unfavorably upon it but the world had to grow used to it. Even *London Punch* commented not unfavorably in its own humorous vein on the event:

Young ladies all, of every clime,
Especially of Britain,
Who wholly occupy your time
In novels or in knitting,
Whose highest skill is but to play,
Sing, dance or French to clack well,
Reflect on the example, pray,
Of excellent Miss Blackwell.

the institution, with the thought that her presence there might act as a check on the very disorderly inmates. It had that good effect. Miss Blackwell herself received certain impressions which served to make her a stern opponent of any attempt at regulated vice in American city life. During this summer, typhus fever, or famine fever, as it was called, was prevalent among the immigrants who were coming from Ireland in large numbers after the famine. So many of these were brought to Blockley that it was difficult to provide accommodation for them, many being laid on beds on the floors of the corridors, and so crowding every available space as to make the danger from contagion extreme. In spite of this, Miss Blackwell devoted herself to the care of these poor patients, and chose this form of typhus as the subject of her graduation thesis, making her studies for it in the midst of the poor dying emigrants who so sadly needed her care and who came to look upon her as almost an angel in disguise.

After her graduation at Geneva in 1849, Dr. Blackwell went to London and Paris, where she finally succeeded in obtaining the obstetrical course at La Maternité, but unfortunately contracted a purulent ophthalmia through which she lost the sight of an eye. She returned to New York to practise, but found the prejudice so strong against her that it was made extremely difficult for her. It was almost impossible to rent a suitable consultation room, for as soon as it was found that she was a woman physician, landlords refused to receive her or landladies to take her in. When finally a landlady did take her in, she lost all the other lodgers, and Miss Blackwell had finally to borrow money and buy a house in order to have comfortable quarters that she deemed suitable for the practice of her profession.

As a rule, what seems very clear from Dr. Blackwell's experience was, that women were much more shocked at her attempt to open a profession for women than were the men. She tells the story of the commotion created by her appearance as a medical student in the little town of Geneva. A doctor's wife at the table where she boarded avoided any communication with her, and as she walked to and from college, ladies stopped to stare at her as at a curious animal. As she says herself, she came to feel much more at home among the medical students at the college than wherever she might be in contact with women. "I afterwards found that I had so shocked Geneva propriety that the theory was fully estab-

lished either that I was a bad woman whose designs would gradually become evident, or that, being insane, an outbreak of insanity would soon be apparent. Feeling the unfriendliness of the people, though quite unaware of all this gossip, I never walked abroad, but hastening daily to my college as to a sure refuge, I knew when I shut the great doors behind me that I shut out all unkindly criticism, and I soon felt perfectly at home amongst my fellow-students."

When her sister, Emily Blackwell, after having studied privately with Dr. Davis, the Demonstrator of Anatomy in the Cincinnati Medical College, applied for admission in 1851 to Geneva, where her sister had graduated in 1849, she was refused admission. The faculty were agreed that the presence of Elizabeth Blackwell had had an excellent effect on both the conduct and the attainments of the students, for there had been more serious attention paid to lectures, and a general air of more interest in the work in hand, but they could not consider her admission a precedent, and they manifestly feared that opening the doors to women would make them unpopular and decrease their attendance. After a number of applications elsewhere had been rejected, Rush Medical College, Chicago, consented to admit her as a student for a year, but after censure by the Illinois State Medical Society the College refused to allow her to go on with the second term. Her application was received favorably by the Medical College of Western Reserve University, Cleveland, Ohio, and here she graduated in 1854. The following summer she attended Dr. James Wood's clinical lectures, just then beginning in Bellevue Hospital, and then she went to Europe.

She spent two years in Europe, the first with Sir James Y. Simpson of Edinburgh, whose private pupil and assistant she became. He learned to think a great deal of her ability and character, and gave her letters which helped her to secure consideration from other distinguished teachers of medicine and surgery in London and Paris. The recommendations accorded her by these men showed her how thoroughly her efforts to secure education for herself were appreciated, and made it clear that it was only a question of time until women would be given wider opportunities for medical education.

Thoroughly trained for her professional life now, indeed after exceptional opportunities that few even of her men colleagues had

enjoyed, Dr. Emily Blackwell returned to New York to co-operate with her sister, Dr. Elizabeth Blackwell, in work of all kinds for women and for the community. Together they secured a charter to open the New York Infirmary for Women and Children, the first woman's hospital in America, with the avowed dual purpose of providing free aid for needy women from women physicians, and at the same time of giving women medical students an opportunity for clinical study and young women physicians a proper chance for hospital practice. Almost needless to say, it had been difficult because of prejudice to secure such opportunities up to this time.

The Legislature of New York State appropriated annually to each dispensary in New York City \$1,000. By presenting the matter in the proper light, the Drs. Blackwell succeeded in obtaining this sum for their dispensary also. The liberality thus displayed proved of great assistance, and the clinical opportunities afforded by the new institution led to the establishment of the Woman's Medical College of the New York Infirmary, in which the Blackwells were the most prominent factors. One of their most important auxiliaries was that woman physician of romantic history, Dr. Marie Zakrzewska, who had encountered so much difficulty in securing medical opportunities in America, in spite of her acknowledged ability, until, aided by Elizabeth Blackwell, she secured her opportunity for a degree in medicine at Cleveland and then returned to New York to help in the struggle for the establishment of the New York Infirmary for Women and Children. In 1857 the New England Female Medical College of Boston invited Dr. Zakrzewska to fill the chair of Obstetrics. There she established the New England Hospital for Women and Children which did so much for the poor and for feminine education.

After the establishment of the Woman's Medical College, Dr. Blackwell felt that she could do more for the advancement of the professional interests of women in England than here or, at least, that they lacked a leader over there, and so she took a house and began practice in London, identifying herself with the women's medical movement and with woman suffrage and various social betterment crusades. She wrote a book of "Counsel to Parents on the Moral Education of Children" which attracted wide attention and was translated into French and German. Because of ill health she was not able to continue her practice in London, but lived at Hastings, and visited the Continent to help organize various woman

movements there. Undoubtedly the opportunity afforded her by a New York medical college of securing a degree in medicine meant much for her life work, and as she lived to be nearly ninety, dying only in 1910, she continued to be a focus of good influence in a great many social betterment movements.

After the return of her sister Elizabeth to England, the burden of the New York Infirmary for Women and its medical school fell mainly on the shoulders of Dr. Emily Blackwell, who proved quite capable of supporting it. Gradually prejudices broke down, and Dr. Emily Blackwell secured a large practice in New York City, which she continued to hold until she was nearly seventy-five, when she retired to Montclair, New Jersey, where she lived until she was nearly eighty-five, dying the same year as her sister. She had made a great many friends for herself and for the movement for women in which she was interested, and had won the respect of every one who came in contact with her.

After the Blackwells, the most important factor in the movement that brought about the introduction of medical education for women, and probably to be considered after them only in time, for her professional influence was co-ordinate with theirs, was Mary Putnam Jacobi (1842-1906). Though born in London, she was descended on both sides from New England Colonial stock. She early showed precocious mentality, and before she was twenty medicine appealed to her. She taught so as to be independent, and took up the study of anatomy privately. Unable to secure a formal medical education, she secured admission to the New York School of Pharmacy as its first woman student and was graduated at twenty. The next two years she spent at the Woman's Medical College, Philadelphia, graduating in 1864, and then was interne at the New England Hospital for Women and Children. After some teaching and writing so as to secure further funds, she went to Paris, where she spent the next five years. She was allowed to study in the hospitals, but would not at first be permitted to enter the medical school of the university. She succeeded in securing permission to do dissecting and then finally was admitted to *l'École de Médecine* as its first woman medical student and graduated in 1871, receiving the highest marks for each of her five examinations, and the bronze medal, the second prize of the year, was awarded to her for her thesis.

The persistence which had given her this opportunity and the magnificently successful way in which it was taken, gave Mary Putnam an international reputation, and her prestige meant much for the cause of feminine education as well in medicine as in other departments. She proceeded to use her influence to the best advantage to her sex. She joined the Blackwells and Dr. Marie Zakzewska who were engaged in organizing the Woman's Medical College in connection with the New York Infirmary. She was admitted to the Medical Society of New York County on the nomination of its president, Dr. Abraham Jacobi, whom she married shortly after. She was extremely active in professional work, particularly in enlarging opportunities for women, and was one of the founders in 1874 of The Association for the Advancement of Medical Education for Women. In 1876 she won the Boylston prize with an essay on "The Question of Rest for Women During Menstruation." This was later published in book form and became the American classic on the subject, often consulted by those who desire a practical guide in this important matter.

As a young woman she had made no inconsiderable success as a writer which gives her a place in the chapter on "Physician Writers," so that it is not surprising that there are a very large number of medical articles from her pen. She wrote the article on "Spinal Myelitis, Meningitis in Childhood," for Keating's "Cyclopedia of Children's Diseases," and the article on "Brain Tumors" for Wood's "Reference Handbook of the Medical Sciences." No wonder that at the time of her death the memorial meeting in her honor held at the New York Academy of Medicine, when addresses by Drs. Emily Blackwell, Cushier, Osler, Dana, and by Mrs. Florence Kelly and Richard Watson Gilder, were delivered, and at her *alma mater*, the Women's Medical College of Philadelphia, where the addresses were by Drs. Welch, Galbraith and Mills, brought out her breadth of intellectual interest, her thoughtfulness for others, and her willingness to make every effort and sacrifice to help solve the social problems of her time. Dr. Osler summed up the influence that Mary Putnam had on her return from Europe probably better than any one else could do it. He had taken part in the making of the history which he thus recorded, though not so intimately related to it as to have his vision obscured. He said:

When Mary Putnam returned from Europe with a Paris medical degree and a training in scientific medicine unusual at that time, even among men, the status of women as doctors was still unsettled. Between the open hostility of the many and the half-hearted sympathy of the few, the position of those in the profession was a most unenviable one. That in the past quarter of a century the long battle has been won is due less to a growing tolerance among physicians at large, less to the persistence with which obvious rights have been asserted, than to the presence of a few notable figures who have demonstrated the capacity of women for the highest intellectual development and who have compelled recognition by the character of work accomplished in the science and in the art of medicine.

The Woman's Medical College of New York proved to be a strong factor for the improvement of medical education, which had sunk to its lowest ebb in this country about this time. Just before the Civil War the medical schools of the country were, as a rule, giving for the degree in medicine two courses of lectures of four months each, the lectures being ungraded; that is, the students attended the same lectures two successive years, a regular attendance not being insisted on to any great extent, and the examination being held only at the end of a course, and not being very strict in its requirements. A common saying among certain of the people of the country districts was, "that a boy who proved to be unfit for anything else must become a doctor" (Stephen Smith). The courses of lectures had to be attended in two different calendar years, in the hope that medical students would spend the months in between in practical observations on patients with their preceptors, and in some study and review of what they had listened to during the first term, but the medical school that was considered one of the best in the country and whose graduates received more assignments in the army and navy than any other, the University of Virginia, was actually giving two courses of lectures of four and a half months each in the same calendar year.

The Women's Infirmary Medical College proceeded to correct some of these evils. The lecture system was largely given up and replaced by the recitation system which brought the students much more closely in touch with their teachers. As far as possible, too, students were required to do practical work, and examinations were held at intervals so as to assure the students' attention and understanding. No wonder that Dr. Stephen Smith

does not hesitate to say, "It is in some measure due to the example and success of the school of the Doctors Blackwell that the system of teaching medicine in this country is changing from the lecture to the recitation, from theoretical studies to practical work in laboratories and hospitals and clinics." The school was founded in connection with the hospital, its initiation being delayed until the hospital was so well organized as to provide opportunities and clinical facilities. In a word, the influence of these women physicians was away from the conventional medical teaching organized with just one idea, that of giving just as little trouble as possible to the professors, no matter what might be the cost in thoroughness to the pupil. The training afforded the women students was at least as good as anywhere in the country, and those who knew them best, some of their male physician examiners, did not hesitate to say that the graduates of the Women's School generally averaged higher in attainments than the men.

In 1882 Dr. Mary Putnam Jacobi was appointed Clinical Lecturer in Children's Diseases at the Post-Graduate Medical School. This was the first time in the history of medicine in this country that a teaching position in a medical school attended by men was held by a woman. It proved to be the entering wedge, for a little later Dr. Sara J. MacNutt was also made a Lecturer in Diseases of Children at the Post-Graduate Medical School, and Dr. Grace Peckham Murray was chosen Professor of Gynæcology there. At the New York Polyclinic Hospital, Dr. Rosalie Slaughter Morton has recently been made Associate Professor of Gynæcology with a staff of four women medical assistants. The medical societies began to open their doors to women when, in 1872, as we have said, Dr. Mary Putnam was admitted to the New York County Medical Society. In 1874 she was a delegate to the annual meeting of the New York State Medical Society. Other medical societies proved ready to follow these examples, and Dr. Mary Putnam Jacobi, as she had now become, was admitted to the New York Academy of Medicine, the New York Pathological Society, and the New York Neurological Society.

Nearly fifty years ago Dr. Stephen Smith in his volume "The Doctor in Medicine" (New York, 1872), in an article on "Women as Physicians," after telling the story of the admission of Miss Elizabeth Blackwell as a student to Geneva Medical College, of which he was then a student, and its chastening effect upon the

students, suggests that there are doubtless many other ways in which the presence of women in medicine will have a corresponding favorable effect. Dr. Smith has had the very unusual good fortune of living for almost a full half century after expressing these views, only to have his opinions in the matter strengthened by the course of time. His large experience in the direction of the charities of New York State makes his opinion in the matter of much greater weight than it would otherwise have. When he wrote originally there seemed little hope that women would be able to make for themselves a distinct place in professional life, but his prophecy has been fulfilled, and yet there is much more that remains for her to do, as he points out, and which doubtless the necessities of the present war will turn from possibilities into actualities. Dr. Smith said:

There is scarcely a charity, having a medical element, which she is not in many respects better adapted to manage than the opposite sex. In hospitals and asylums for her own sex, for children, and for the aged, she is pre-eminently qualified to have the entire management. It is questionable also if her quick perception, her generous sympathies, her kindly influences, and her admitted jurisdiction over all that pertains to domestic regulations, would not peculiarly qualify her for the care and superintendency of lunatic asylums, reformatories, etc., if a proper medical education were superadded. These are but few of the many branches of medical service which will open inviting fields of labor to those women who are attracted to the study of medicine. It is idle to resist the progress of public opinion toward the largest liberty in the education of women for the most active duties of society, and their free choice of, and perfect equality in, such departments as they may elect to enter. It is certain that medicine, which gives such scope to the study of the natural sciences, and such development to the higher sentiments and holier feelings in the practical application of its principles will hereafter invite women to our ranks in yearly increasing numbers.

The Woman's College in New York went out of existence with the opening of the Medical Department of Cornell University to women students. It might be thought, perhaps, that this cessation of existence put an end to one great feature of the movement for feminine education which had been initiated by the Blackwells and the group around them, but it is perfectly clear from what we know of their intentions that, as Professor Welch said in his memorial address, "the Blackwells did not believe that separate colleges for women studying medicine could be anything

more than a temporary expedient." Dr. Elizabeth Blackwell said, "the friends who established and helped to support the Infirmary and its college for women regarded coeducation as the final step in the medical education of women!" Professor Welch comments, "The necessity for coeducation in some form becomes more evident the higher the character of the education. In no form of education is this more true than in that of medicine." The experience at Johns Hopkins was similar to that of Geneva earlier, and Dr. Welch did not hesitate to say that the presence of women lifted the tone not only of the students but also of the professors of the school.

Dr. Jacobi, who was, through his wife, perhaps more closely in touch with the efforts and the policy of the movement for feminine education in New York City than any other of our physicians, emphasized in his memorial address for Miss Blackwell, particularly the social service that women physicians recognized as their duty in connection with medical practice. They felt that they should be humanitarians in the sense in which Virchow declared so emphatically sixty years ago that the physician was meant to be, "the attorney of the poor." How much Elizabeth Blackwell anticipated many modern ideas in the medicine of New York, and, above all, our sanitation and public hygiene, is very well brought out by the few words of her autobiography which sums up her attitude toward medical practice. She said: "Extremely sceptical in relation to the value of drugs and ordinary medical methods, my strong faith in hygiene formed the solid ground from which I gradually built up my own methods of treatment. Looking back upon a long medical life, one of my happiest recollections is of the number of mothers whom I influenced in the healthy education of their children."

The influence of this group of women physicians in New York was felt particularly in the ethical sphere of human relations. None of them were particularly distinguished from a scientific standpoint, though they were at least as brilliant as the average man around them, but they thought in terms of patients rather than of cases and accomplished much and they served to awaken social initiative for the benefit of those around them. Dr. Emily Blackwell, for instance, is distinguished for having established a chair of hygiene, the first one to be found in any college, and women physicians awakened sooner to the necessity of a crusade

of knowledge for preventive medicine than did the men around them. In our time we have come to recognize the close relations between social service and medicine not only for the prevention of disease but for its after treatment. The women physicians were pioneers in this, for they thought deep in their hearts as well as their minds and, therefore, saw more clearly the amelioration of conditions needed for the improvement of health.



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